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ON CONTROVERSY OF THE HOMOEOPATHIC DRUG RUTA GRAVEOLENS LINN. VIS- A-VIS RUTA CHALEPENSIS LINN.

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The drug *Ruta graveolens* was introduced into Homoeopathic practice by Hahnemann in 1818 and consequently cited in many Homoeopathic Therapeutics, P-967; Boericke's Pocket Manual of Homoeopathic Materia Medica, P-559; Clarke's Materia Medica, Vol. III, 1028 etc. After overall assessment of its therapeutic efficacy and clinical importance, the drug achieved its place in Homoeopathic Pharmacopoeia of India Vol. I. Whole plant of *Ruta graveolens* Linn. is recommended for Homoeopathic preparation. The main clinical indications of the drug in Homoeopathic System of Medicine are Rheumatism, Sciatica, Epistaxis, Constipation, Warts, Paralysis, Dyspepsia, Amblyopia, Prolapse of rectum, Dislocation, Pain in bones, Enuresis, Exostosis, Fracture, Haemorrhages, Perichondritis, Stammering, Cramps in tongue, Difficulty of urination, Vericocele, Varicose veins, Neuralgia etc.

While collecting the raw drug *Ruta graveolens* Linn. for standardisation studies at the Institute level for various sources some doubts were cast on identity and occurrence of the plant. In the present paper the author has tried to bring a clear picture on above aspects under the notice of all concerned after extensive literature/herbaria survey and studies on morphological characters of the available plant materials.

Literature Screening on Identity and Nomenclature

1. **Flora of British India Vol. I, P-485, 1875**:- *Ruta graveolens* Linn. var. *angustifolia* has been reported. Hooker described the pant as: leave petioled, triangular ovate decompound, segment various, corymbs spreading, bracts lanceolate, sepals triangular acute, petals ciliate, capsule obtuse, shortly pedicelled. *R. angustifolia* pers. W & A, prodr. 146, *R. chalepensis* wall cat. 7113.

2. **Chittenden F. J. 1951 & Uphof 1968 :-** *Ruta angustifolia* is considered as a synonym of *R. chalepensis* or only as a variety. *R. chalepensis* Linn. var. *angustifolia* (Pers.) Wilke et Lange (Mansfeld 1959).

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3. **Darlington & Wylie 1965**:- In chromosome atlas of flowering plants, they have reported that *R. chalepensis* has X = 36 chromosomes, while *R.graveolens* has X = 72 or 81.

4. **Guenther 1952**:- The oil distilled from *R. graveolens* is said to contain chiefly methyl nonyl ketone, while oil from *R. chalepensis* (Syn. *R. bracteosa* D.C.) contains chiefly methyl heptyl ketone.

5. **Wealth of India (Raw materials) Vol. 9 & Useful Plants of India PID, CSIR**:- Two species are reported to be grown in India viz. I. *Ruta chalepensis* Linn. (Syn. *R. bracteosa* D.C., *R. angustifolia* pers., *Ruta graveolens* Linn. var. *angustifolia* Hook. f.) A perennial herb, 25-27 cm. high, cultivated in Indian gardens. Leaves shortly petiolate, ultimate segments obovate-lanceolate to narrowly oblong, inflorescence lax, flowers yellow, petals ciliate, capsule glabrous with sharply pointed lobes. II Ruta graveolens Linn-Native of Mediterranean region & sometimes cultivated in Indian gardens. Leaves aromatic; flower yellowish small in corymbs, petals with denticulate or wavy margin, capsule small with lobes somewhat rounded.

6. **Flora Europaea Vol.2, 1968**:- Five species are reported with taxonomic keys.

1. R.montana(L) L.

a. Leaf segments linear, pedicels shorter than capsule; petals not denticulate or ciliate.

2. R. angustifolia pers.

a. Leaf segments oblanceolate to oblong obovate; pedicels as long as or longer than capsule.
b. Petals fringed with long cilia.
c. Bracts not or scarcely wider than branches which they subtend; plant glandular puberulent above.

3. R.chalepensis L.Mantissa 69(1767) (Syn. R. bracteosa D.C.)

c. Lower bracts much wider than the branches which they subtend; plant glabrous throughout.

4. R. graveolens L. sp. pl. 383(1753)

b. Petals denticulate, without long cilia.

d. Sepal, lanceolate, acute, pedicels slightly longer than the capsule.

5. R. corsica D.C.

d. Sepals deltate. ovate, obtuse, pedicels at least twice as long as the capsule.

7. **Index Kewensis**:- In I.K., Tomus II, IIIrd reprint ED. 1977, It has been reported that *R. chalepensis* wall cat. 7118 = *graveolens*.

8. **Homoeopathic literature**;- Allen (1889) refers use of *R. graveolens* Linn. but most of the other, Homoeopathic Materia Medica & Repertory viz. Boenninghausen's, Cowperthwaite, Clarke, Hering, Farrington and Dewey mention either *Ruta graveolens* or only Ruta without informing the authority of plant or variety. HPI Vol. I refers whole plant of *Ruta graveolens* Linn. In H.P.U.S. Vol.I *Ruta montana* is reported as synonym of *R. graveolens* but as per Flora Europaea, both species are different.

9. **R.S. Singh et. al. 1968:-** The Sudab is vernacular name of the plant *Ruta graveolens* Linn. to which also the name Titlee is given. The name titlee is also given to *Euphorbia dracunculoides* Lam., which is now the main source of Sudab. Hence, in the drug market, one gets under the name Sudab, mostly *E.dracunculoides*. *Ruta graveolens* Linn. & *E. dracunculoides* Lam. are botanically quite different, having different morphological characteristics of their respective families, yet in the drug condition they resemble each other to a great extent.

Collection And Cultivation

Western India:- Ramanathan & Ramachandran (1970) have reported that fresh specimens obtained from Poona & Bombay, through the courtesy of Prof. V.S.Rao, Ramnarain Ruia College, Matunga, Bombay. An examination of the floral parts showed that the plant commonly grown in Bombay & Poona agreed closely with description of *Ruta chalepensis* Linn.

South India:- Fresh plants obtained from Bangalore and Coimbatore appeared to be of *Ruta chalepensis* & not of *Ruta graveolens* (Ramanathan et. al. 1970). Author has also received a lot of the drug and herbarium sheet of *Ruta chalepensis* Linn. (*R. graveolens* Linn. variety *angustifolia*) of locally stone house hill Ooty from S.M.P.C.U. Ooty (a CCRH unit) against our request for the supply of *Ruta graveolens*, which was not available there.

North India:- The Herbaria of C.D.R.I. and N.B.R.I., Lucknow were consulted for the specimen of *Ruta graveolens* Linn. The under mentioned herbarium sheets were studied in respect of the floral characters of the plant. All specimens were identified to be of *Ruta chalepensis* Linn.

A. Herbarium, National Botanical Research Institute, Lucknow:-

Sl. No.	Acc. No.	Specimen belongs to	Locality and date of collection
1.	7352	Ruta graveolens Linn.	N.B.G.Lucknow 6-2-59
2.	18678	-DO-	-DO- 9-4-55
3.	55130	-DO-	Cultivated 1-3-63
4.	22725	-DO-	Bangalore 13-8-56

B. Medicinal Plants Herbarium C.D.R.I. Lucknow :-

1.	3156	Ruta graveolens Linn.	Dodhabetta, Ooty 7-10-69

A live plant of *R. graveolens* Linn. was collected by the author from medicinal plants garden CIMAP, Lucknow through courtesy of Dr. S.P.S. Duhan in the month of Oct. 91. Pot cultivation of the plant was tried. The plant started blossoming in the month of Mar. 92. The whole plant with its flowers was closely observed and found to have following characters:-

Strongly aromatic, stem erect branched, cylindrical, solid herbaceous more or less woody, glabrous throughout, approximately 60cm. high; leaf pinnately compound, alternate cauline, exstipulate, lower leaves more or less long, petiolate ultimate segments 2-5 mm wide, narrowly oblong, lanceolate, or obovate; pedicel 4-5 mm long, inflorescence cymose type, bracts cordate to ovate, wider than the subtended branch, flowers complete, bisexual, actinomorphic, hypogynous; sepals 4-5, glabrous, seploid, regular polysepalous, ovate; petals 4-5, yellow, oblong, fringed with cilia, stamens 8-10, filament glabrous; ovary 4-5 lobed syncarpous; fruits glabrous with pointed lobes.

Above observations of the flowering plant resemble closely with *R.chalepensis* Linn. rather than *R.graveolens* Linn. (Flora Europaea Vol. 2). Hence the plants supplied by CIMAP, Lucknow was identified to be of *R.chalepensis Linn.*

Discussion & Future task:- Two species of Ruta viz. *R.graveolens* Linn. and *R.chalepensis* Linn. are reported to be available in India under cultivation in Indian gar-

dens. First is occasionally cultivated. All the plants examined/reported from various centres in India appear to be of *R.chalepensis* Linn. Although it is not improbable that *R.graveolens* Linn. may be grown in some places. In this context, one may have doubt whether commercial manufacturers of Homoeopathic drugs are using plant *R.chalepensis* Linn. instead of *R.graveolens* Linn. which is sometimes cultivated in Indian gardens, They must differentiate between the closely resembling species before undergoing commercial production otherwise it will be a foul play with Homoeopathic physicians.

Other task is to formulate differential plant anatomy, chemistry and pharmacology of both the species. This will help a great deal in quality control of Homoeopathic drug prepared from *R.graveolens* Linn. The *R.chalepensis* Linn. is considered a perfect substitute in India for *R.graveolens* Linn. (Wealth of India, Raw Materials Vol. 9). It possesses anti-spasmodic and sudorfic properties and stimulates the nervous system. It is commonly used in convulsions and fever. Since both the species have wide therapeutic efficacy, it may be stated here that differential drug proving and clinical trials on administering the drug *R.graveolens* Linn. and *R. chalepensis* Linn. may also be tried which may open a new vista in the field.

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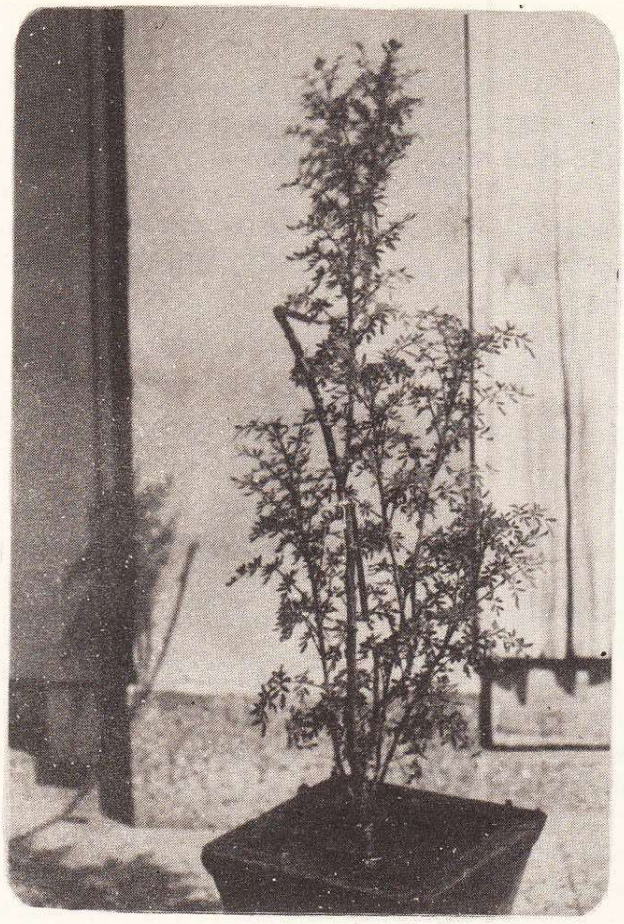

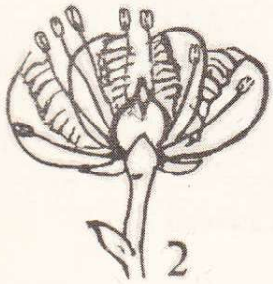

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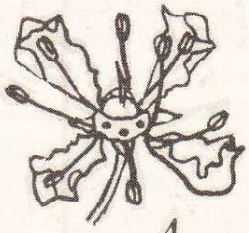

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Fig. 1. A plant of Ruta chalepensis Linn.

Fig. 2. A flower of R. chalepensis Linn.
showing ciliated margins of petals.

Fig3. Fruits of R.chalepensis Linn. showing pointed lobes.

Fig4. A plant of Ruta graveolens Linn.
showing denticulate margins of petals.