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CORRECT SCIENTIFIC NAME OF "BABUNA" USED WIDELY AS A DRUG IN UNANI SYSTEM OF MEDICINE

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Three plants, namely *Anthemis nobilis* Linn., *Corchorus depressus* Linn., and *Matricaria chamomilla* Linn., are reported under only one Unani name "Babuna" at different places in the literature. Since one name is not possible for three different plants, it created a lot of confusion and misuse of the drug. To resolve this discrepancy, detailed taxonomic and anatomical studies were conducted. Based on these studies, it has been found that *Corchorus depressus* Linn. belongs to the family Tiliaceae whereas *Anthemis nobilis* Linn. and *Matricaria chamomilla* Linn. belong to compositae. As a result of further studies it was determined that "Babuna" also belongs to the family compositae and is nothing but *Matricaria chamomilla* Linn. Thus, it has been proved that the correct scientific name of "Babuna" is *Matricaria chamomilla* Linn.

INTRODUCTION

The raw drugs of vegetative origin are used widely in Unani system of medicine, which is very popular in Indo-Pakistan subcontinent. The physicians who practise this system are known as "Hakims". The reason of its being popular are several. About 80% of our population lives in rural areas where alopactic doctors are not available as well as the pharmaceutical shops are scarce. In addition, the cost of these medicines is beyond the reach of village dwelling population. The properties and nature of these raw drugs of plant origin are known to the villagers through personal experience and ancestral prescriptions.

These drugs are being used regularly from generation to generation and have proven to be effective and beneficial. There is an added advantage that herbs usually have less side effects as compared to the alopactic drugs. At times certain herbs may be available free of cost if they grow in the surrounding areas.

Unani system of medicine is widely practised in villages and cities. The raw drugs used in this system of medicine could be obtained from the drug stores with their Unani names which are equally their local names in most of the cases.

At times it has been found that in Unani literature, a single name is used for more than one plant, which may even belong to different plant families. For example, three plants, namely: *Anthemis nobilis* Linn. *Corchorus depressus* Linn. and *Matricaria chamomilla* Linn. are referred under the name "Babuna" at different places in the literature [1]. In the first place, only one name "Babuna" is not possible for three different plants, and secondly, this creates difficulty for users as well as collectors who must know the

correct plant so that it may be effective. Keeping in view this consideration, the present studies are taken up so that the drug samples already used may be compared with all the three plants and determined as to which one of the three is the actual "Babuna". In Pakistan it's annual consumption is 100 MDS valuing Rs.30,000/= [2]

MATERIAL AND METHODS

A reasonable number of "Babuna" drug samples were procured from Punjab and N.W.F.P. drug stores. For comparison and standardization *Anthemis nobilis* Linn., *Corchorus depressus* Linn. and *Matricaria chamomilla* Linn. were cultivated at the experimental farm of PCSIR Laboratories, Peshawar. Dried samples of all the three cultivated plants were compared with the market samples to add to a reliable conclusion.

Taxonomical studies of the market samples and the three plants grown in the experimental farm were conducted. A comparative table has been provided showing the important features of the floral parts of the market sample of "Babuna", *Anthemis nobilis* Linn. and *Matricaria chamomilla* Linn. (Table 1). Maceration studies and microtome sectioning were done by Jaffary's and Johanson's methods respectively [3]. Camera Leucide drawings have been made and measurements of different types of cells were recorded (Table 2).

RESULTS AND DISCUSSION

Anthemis nobilis Linn. (Fig. 1)

It belongs to family compositae [4, 5], Receptacle is solid. On peduncle numerous unicellular nonglandular

Table 1. Studies of the flower parts of *Anthemis nobillis* Linn., market sample of "Babuna" & *Matricaria chamomilla* Linn.

Part	<i>Anthemis nobillis</i> Linn	Market sample of "Babuna"	<i>Matricaria chamomilla</i> Linn
Receptacle	Solid	Hollow	Hollow
Flower head	Conical	Ovoid, becoming conical	Ovoid, becoming conical.
Peduncle	Numerous unicellular, nonglandular hairs present.	Unicellular nonglandular hairs absent.	Unicellular nonglandular hairs absent.
Paleae (scale on receptacle)	Present, broad & bristly acuminate.	Absent	Absent
Ray (Ligulate florets)	Pistillate, 3-toothed, 3-6 veined 12-18 in one series.	Pistillate, 3-toothed & 4-veined, 10-20 in one series.	Pistillate, 3-toothed & 4-veined, 10-20 in one series.
Bracts	Obtuse, pubescent, with scarious margins.	Entire, lanceolate.	Entire, lanceolate.
Achene	Oblong, obtusely 3-angled.	Smooth, 3-5 ribbed.	Smooth, 3-5 ribbed.
Pappus	Absent	Toothed membrane	Toothed membrane

Table 2. Measurements of the macerated tissues of the stem portion

Type of the cells	Market sample of "Babuna"		<i>Matricaria chamomilla</i> Linn.	
	Length	Breadth	Length	Breadth
Pitted vessels	625 μ - 700 μ - 810 μ	87 μ - 85 μ - 98 μ	625 μ - 700 μ - 810 μ	58 μ - 87 μ - 100 μ
Scalariform vessels	320 μ - 416 μ - 600 μ	50 μ - 70 μ - 90 μ	320 μ - 416 μ - 600 μ	50 μ - 75 μ - 90 μ
Reticulate vessels	412 μ - 520 μ - 700 μ	40 μ - 45 μ - 60 μ	415 μ - 520 μ - 705 μ	40 μ - 47 μ - 60 μ
Spiral vessels	310 μ - 370 μ - 400 μ	50 μ - 70 μ - 90 μ	310 μ - 370 μ - 400 μ	50 μ - 70 μ - 90 μ
Sclerenchymatous cells	300 μ - 460 μ - 700 μ	16 μ - 20 μ - 25 μ	300 μ - 460 μ - 700 μ	16 μ - 20 μ - 25 μ
Fibres	650 μ - 870 μ - 1000 μ	70 μ - 90 μ - 110 μ	650 μ - 870 μ - 1000 μ	70 μ - 90 μ - 110 μ

hairs are present. Paleae (scales on receptacle) are present, broad and bristly acuminate. Ligulate florets are pistillate, 3 - toothed, 3 - 6 veined, 12 - 18 in one series. Bracts are obtuse, pubescent, with scarious margins. Achene is oblong, obtusely 3 - angled, pappus is absent.

Corchorus depressus Linn.

It belongs to family Tiliaceae (4 & 5) whereas market samples of "Babuna" belong to family compositae, and therefore no further studies were needed.

Matricaria chamomilla Linn. (Fig 2A)

It belongs to family compositae [4, 5], flower heads show conical, hollow receptacle, surrounded by flattened imbricated involucre. Toothed membrane pappus is present. On peduncle unicellular, nonglandular hairs absent. Paleae (scales on receptacle) absent. White ligulate florets are pis-

tilate, 3 - toothed, 4 - veined, 10 - 20 in one series. Yellow tubular florets are observed. Bracts are entire, lanceolate. Achenes are smooth, 3 - 5 ribbed.

Babuna: market sample (Fig. 2B). Market samples consisted of flowers and stems. Taxonomic studies show that drug samples of "Babuna" belong to the family compositae. Flower heads conical, receptacle hollow, surrounded by flattened imbricated involucre, toothed membrane pappus is observed. On peduncle unicellular nonglandular hairs absent. Paleae (scales on receptacle) absent. White ligulate florets are pistillate, 3-toothed & 4-veined, 10 - 20 in one series. Yellow tubular florets are observed. Bracts are entire, lanceolate. Achenes are smooth, 3 - 5 ribbed.

Macroscopic studies of the market samples of "Babuna" as well as the three plants referred to in literature with the Unani name "Babuna" were thoroughly investigated. On this basis, it was determined that *Corchorus depressus* Linn. belongs to the family Tiliaceae whereas drug samples of "Babuna" as well as *Anthemis nobilis* Linn. and *Matricaria*

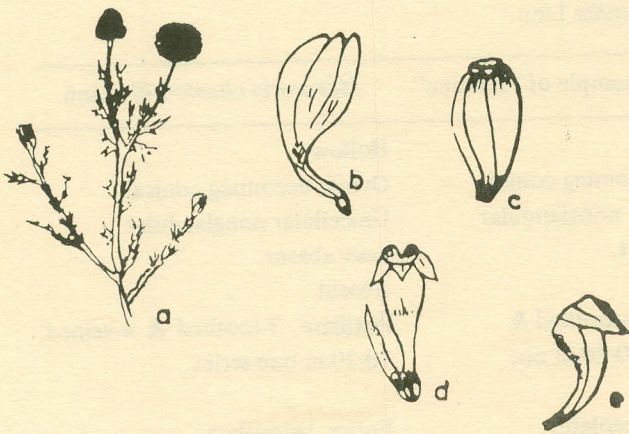


Fig. 1. *Anthemis nobillis* Linn.: a. Flowering shoot; b. Ray florets; c. Achene; d. Disc floret & Scale; e. Phyllary.

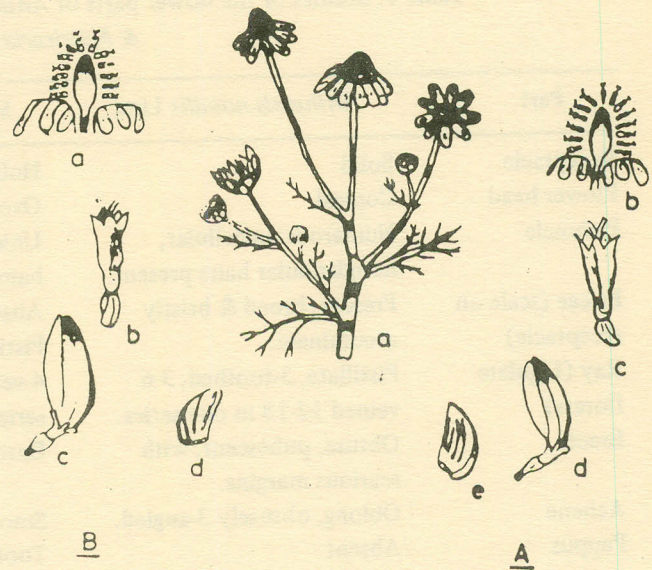


Fig. 2-A. *Matricaria chamomilla* Linn.: a. Flowering shoot; b. V.S. of capitulum; c. Ray floret; d. Disc floret; e. Fruit. B. Market sample of "Babuna": a. V.S. of capitulum; b. Ray floret; c. Disc floret; d. Fruit.

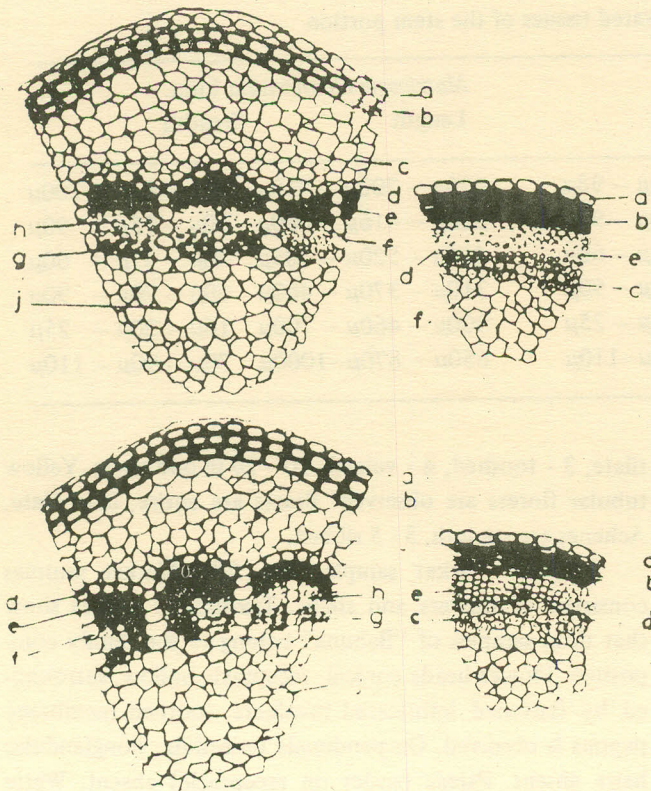


Fig. 3. Upper left - T.S. of "Babuna" stem: a. Epidermis; b. Collenchyma; c. Cortex; d. Endodermis; e. Sclerenchyma; f. Medullary rays; g. Xylem; h. Phloem; i. Pith. Upper right - An enlarged portion of the T.S. of "Babuna" stem: a. Endodermis; b. Sclerenchyma; c. Xylem; d. Cambium; e. Phloem; f. Pith. Lower left - T.S. of *Matricaria chamomilla* Linn.: a. Epidermis; b. Collenchyma; c. Cortex; d. endodermis; e. Sclerenchyma; f. Medullary rays; g. Xylem; h. Phloem; i. Pith. Lower right - An enlarged portion of the T.S. of *Matricaria chamomilla* Linn.: a. Endodermis; b. Sclerenchyma; c. Xylem; d. Cambium; e. Phloem; f. Pith.

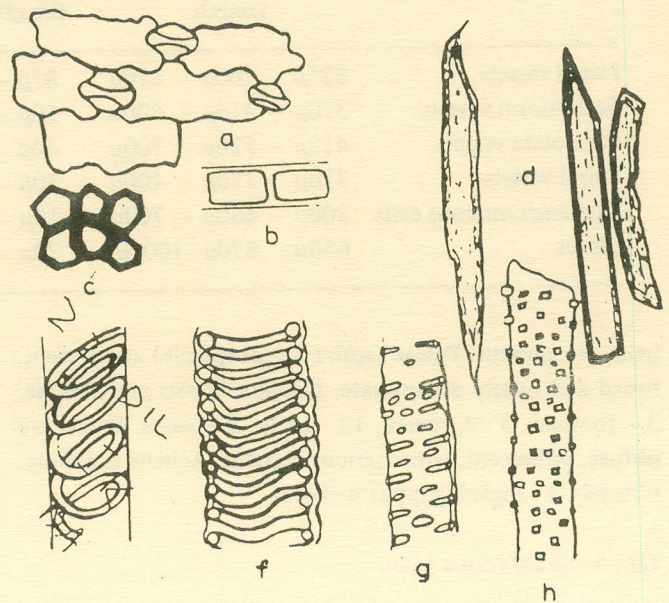


Fig. 4. Macerated tissue of *Matricaria chamomilla* Linn.: a. Top-view of epidermis; b. Side-view of epidermis; c. Collenchyma; d. Fibres; e. Spiral vessels; f. Scalariform vessel; g. Reticulate vessels; h. Pitted vessels.

chamomilla Linn. (which are also referred to in the literature as "Babuna") belong to the family compositae. Since *Corchorus depressus* Linn. belongs to altogether a different family, there was no need to study it further. However, the remaining two plants i.e. *Anthemis nobillis* Linn. and *Matricaria chamomilla* Linn. belong to the same family as "Babuna" samples collected from the drug stores. To

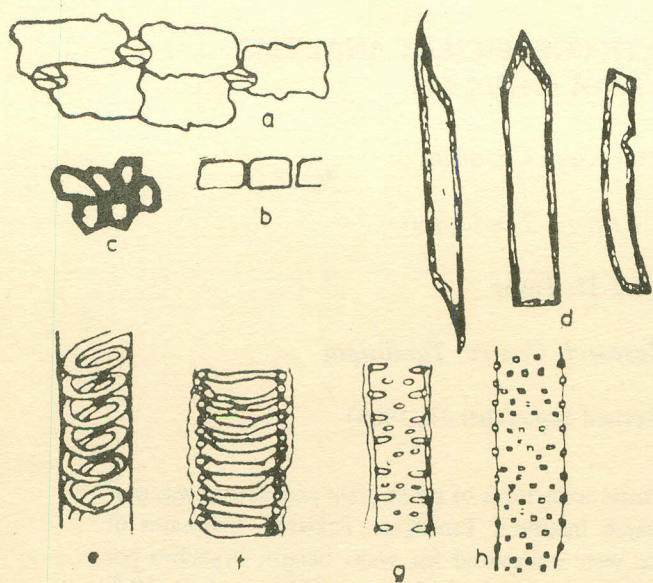


Fig. 5. Macerated tissue of market sample of "Babuna": a. Top-view of epidermis; b. Side-view of epidermis; c. Collenchyma; d. Fibres; e. Spiral vessels; f. Scalariform vessels; g. Reticulate vessels; h. Pitted vessels.

compare and contrast these three, taxonomical studies were made.

On the basis of these studies, it is clearly proved that *Anthemis nobillis* Linn. is totally different as compared to the market samples of "Babuna" (Table 1). The main features which distinguish it from the latter are the solid nature of receptacle, unicellular nonglandular hairs on peduncle, presence of paleae (scales on receptacle, broad

and bristly acuminate). Ligulate florets are pistillate, 3-toothed, 3 - 6 veined, 12 - 18 in one series. Bracts obtuse, pubescent, with scarious margins. Achenes are oblong, obtusely 3 - angled, pappus absent.

When we look at the floral characters of *Matricaria chamomilla* Linn. and market samples of "Babuna", there is hardly any difference between them. In addition, the studies made on the T.S. of the stems (Fig. 3) as well as maceration studies (Fig. 4 & 5 and Table 2) do not show any difference. As such, it is concluded that "Babuna" as sold in the market, is nothing but *Matricaria chamomilla* Linn. The names *Anthemis nobillis* Linn. and *Corchorus depressus* Linn., though, referred to in the literature as "Babuna" are totally different when compared with the "Babuna" samples obtained from the market.

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