

# *Euphorbia* subgenus *Euphorbia* section *tricanthium* Jacobsen.

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In this article I want to present to you a group of related species close to *Euphorbia triaculeata* Forskål. These species have their natural habitat in North East Africa and the Arabian peninsula. They are characterized by a short thick main stem with many side branches, like the South African medusoid species. However this group of species possesses stipular spines, which are absent in the real medusoid species. A second important characteristic feature in this related group of species is that the upper two of four spines are completely or partly fused to one spine. All species are highly appreciated by specialized growers of euphorbias, however they can be very stubborn in cultivation.

## The taxonomical place of the section *Triacanthium* in the genus *Euphorbia*

The definition of the family *Euphorbiaceae* as a unified unit has not been a subject for heated discussion in botanical quarters for the last decade. Since the taxonomical review of Grady L. Webster (1994) of the University of California saw the light of day, this classification of the higher taxa in the family of the *Euphorbiaceae* has been widely accepted. It divides the *Euphorbiaceae* into five subfamilies, namely *Phyllanthoideae*, *Oldfieldioideae*, *Acalyphoideae*, *Crotonoideae* and *Euphorbioideae*. This last subfamily has our most interest and consists in five tribes, of which the tribe *Euphorbiae* is most important. In turn the tribe *Euphorbiae* is divided in three subtribes; *Anthosteminae*, *Neoguillaminiinae* and *Euphorbiinae*. There may be an agreement about the division of the higher taxa in *Euphorbiaceae*, but this is certainly not the case in the lower taxa. These lower taxa are successively divided into sections, subsections, genera, subgenera, species, subspecies, varieties and forms. Most

discussion is about the genus *Euphorbia*, the spurges, which contains by far the most succulent species and is of course best known by the lovers of succulent euphorbias.

In the well known standard work of Hermann Jacobsen (1977) the succulent species of *Euphorbia* are placed in three groups, namely the *Pedunculacanthae*, the *Stipulacanthae* and Complex M. This last group, Complex M, contains the species originating from Madagascar. Apparently he did not know exactly what to do with these species as it is a very variable group. The *Stipulacanthae*, which are characterized by the possession of a stipular spine, are divided in four sections accordingly to the number of spines at each leafbase, in this case one: *Monacanthium* Chev., two: *Diacanthium* Boiss., three: *Tricanthium* Jacobsen and four: *Tetracanthium* Jacobsen. As one might notice making a botanical classification is a job for anyone who can count on the fingers of one hand! Putting a particular species in a certain section might prove to be a bit more of a problem. So the species *Euphorbia monacantha* Pax has given its name to the section *Monacanthae* and was originally put into this section. However *E. monacantha* is much more closely related to the species of the section *Tricanthium*. So this species and *E. immersa* Bally & S.Carter are put into the latter section. Whether the remaining species in the section *Monacanthae*, with its most well known species *E. venenifera* Trémaux ex Kotschy, really belong at all in the group of *Stipulacanthae* is most questionable and are perhaps best placed in a group of their own.

The section *Triacanthium* is not a homogeneous group of species, but can be divided in two parts. One group has a more southerly distribution area, concentrated in Kenya, and are lacking the short, thickened main stem. These species, the most well known being

*Euphorbia similiramea* S.Carter and *E. glochidiata* Pax, I will exclude from this article. The group of species treated here are *Euphorbia monacantha* (many are known by this name, but in my opinion it is not in cultivation today), *E. triaculeata* Forskål, *E. schizacantha* Pax, *E. xylacantha* Pax, *E. immersa*, *E. actinoclada* S.Carter, *E. kalisana* S. Carter, *E. awashensis* M.Gilbert, *E. erigavensis* S. Carter, *E. margaretae* S. Carter, *E. myrioclada* S.Carter and the most recently described *E. godana* Buddensiek, Lawant & Lavranos. Moreover I want to present to you two forms, which are in cultivation, namely *E. species nova* 'Mrs. Ash' and *E. species 732*.

### *Euphorbia triaculeata* Forskål

Since the section *Triacanthium* takes its name from *Euphorbia triaculeata* and furthermore it was the first species to be described, it is obvious we start the discussion of each species with this one. As early as 1775 it was described by Forskål on basis of plants originating from the 'Costa dei Migurtini', nowadays better known as Somalia. Susan Carter (1987) states that the identity of *E. triaculeata* is no problem and that it is still growing at the type locality, near the shore of the Red Sea of the Arabian Peninsula. She mentions that apparently the same species grows in nearby Djibouti. This article is supplied with a nice habitat picture of this species made in Djibouti. These plants are striking, about half a meter high, sprouting from a depressed main stem with side branches which form an angle of approximately 45 degrees with ground level. In the accompanying text we find a description of the plants; about half a metre high, side arms are 1 to 1.5 cms thick, 3 to 5 ribs and the spines stand on arched podaria. In an

article from Rauh (1966) we find another habitat picture with plants on it with the same habit. However I don't know any plants from the type locality. I take *Euphorbia triaculeata* to be big plants (0.5 metre high), having these straight side branches with the constant angles and the waving ribs (arched podaria).

Plants found by Schweinfurth in Eritrea on the flats west of Massana are described by Pax as *Euphorbia infesta*. These plants are thought not to be different from *E. triaculeata* and so *E. infesta* is synonymous. Other plants found on some islands in the Hamfila Bay off the coast of Eritrea were described by Ehrenberg as *Euphorbia triacantha* and later degraded by N. E. Brown as a variety of *E. triaculeata*.

In our collections there are several forms circulating labelled as *Euphorbia triaculeata* or *E. spec. affinis triaculeata*. Most of them are of unknown origin or at least unsure, but in my opinion the real *E. triaculeata*, with the above mentioned identifying features, is rather rare. Of all the plants with this species name I came across in some 20 years, plants with the collection number AJB249, collected south-east of Hays on the Tihama plains, Yemen, matched the description most closely. This collection has also the thick more than 1 centimeter thick branches with the arched podaria on which the spine shields are placed. The cuttings I grew in my collection did rebranch quite frequently and strikingly these side branches formed the above mentioned angle of 45 ° and went on growing rather straight, when not disturbed and do not curve into a vertical position. Recently plants were sold by Ernst and Marita Specks as *E. triaculeata* and these rooted cuttings match the plants of AJB 249 quite well. I acquired this plant just

Table 1: Classification of the higher taxa of the family *Euphorbiaceae*.

Family	Subfamily	Tribes	Subtribes	Group	Section
Euphorbiaceae	Phyllanthoideae				
	Oldfieldioideae				
	Acalyphoideae				
	Crotonoideae				
	Euphorbioideae	Euphorbieae	Anthosteminae		
			Neoguillamiinae		
			Euphorbiinae	Pedunculacanthae	
				Complex M	
				Stipulacanthae	Monacanthium
					Diacanthium
					Triacanthium
					Tetracanthium

recently and not knowing its flowers or where it comes from I cannot say much more about it than that similar plants were also distributed by Chuck Hansen in the United States.

The first three habitat pictures accompanying this article were taken by Giuseppe Orlando from a single colony of *Euphorbia triaculeata* on the Tihama plains close to Mokha. By the different shapes of these individuals one can see its variability. The height of these plants can be as much as 80 centimeters and estimated some 60 centimeters in diameter. This population of several dozen of plants is under serious threat because of agricultural development (Orlando, pers. comm.).

Alan Butler, who collected AJB249, made at least two other collections, designated as *Euphorbia* (species affinis) *triaculeata*, which are numbered as AJB D3 and AJB D10. Both have much thinner branches.

*Euphorbia* species affinis *triaculeata* AJB D3 was collected south of Djibouti-town. In cross section branches are circular and the green is slightly marbled with stripes of lighter green. The flowers are very showy and coloured bright red and yellow. Like most, if not all, species in this group is *E. species affinis triaculeata* AJB D3 is self-fertile and seedlings form the thick depressed main stem. Although sowing seed is the best way to get a

plant with natural habit, there is also a vegetative way to achieve this. Once a branch is rooted it is best to cut off the upper part of it. It is forced to produce sidebranches if it wants to grow further. If you are lucky enough these side branches show the characteristic features of a thick short main stem. When big enough these side branches can be cut off again and rooted. This so-called cut-two-times-method can supply you with plants with natural habit.

*Euphorbia* species affinis *triaculeata* AJB D10 and also *E. species nova* Lavr. 13176, Djibouti, will be discussed under the newly described *Euphorbia godana*.

I grow two different clones of different origin, which are both labelled as *Euphorbia triaculeata*, Yemen. One is a gift from a friend from Slovakia and the other one was collected by Frans Noltee. Unfortunately both have lost other data on locality or collection number. The one from Slovakia is a very weak form and the slightly marbled side branches curve upwards on plants with the original main stem. The one collected by Frans Noltee is somewhat thicker and the spine shields are placed on ribs and an elevated foot. Between the ribs is

Fig. 1 – 3: *Euphorbia triaculeata* growing near Mokha on the Tihama plains, Yemen. (Pictures Giuseppe Orlando)







Fig. 4: *Euphorbia species affinis triaculeata* AJB D3 with nice two coloured cyathia

a light green stripe and all in all I think this is one of the most handsome forms of all dealt with here.

Overseeing all these forms one can say that many things still needs to be sorted out and a lot of research in the field needs to be done before a satisfactory scientific solution is found for all relationships and taxonomic places are found. Putting all the weaker forms in the variety *triacantha* seems from material available in cultivation to be an easy solution.



Fig. 5: *Euphorbia species affinis triaculeata* AJB D3 showing variation in flower colour.

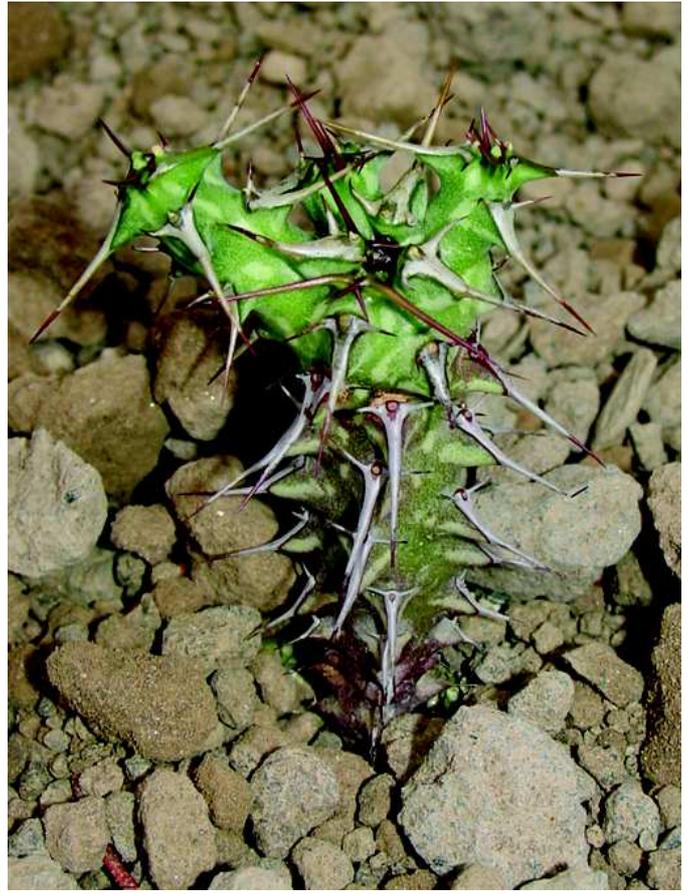


Fig. 6: A one year old seedling of *Euphorbia species affinis triaculeata* AJB D3 showing typical growth

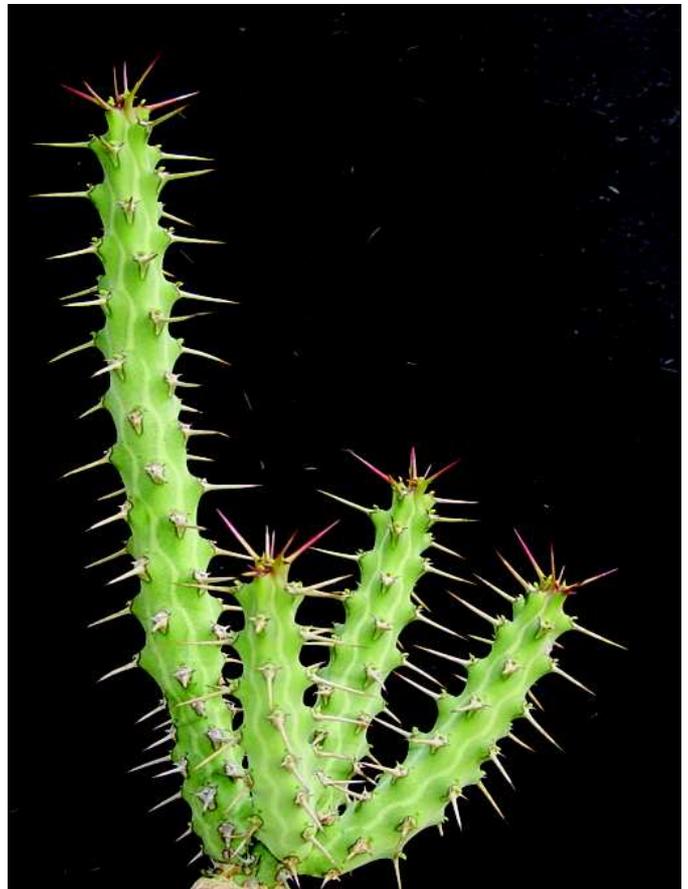


Fig. 7: Grafted cutting of *Euphorbia species affinis triaculeata* collected by Frans Noltee in Yemen

## *Euphorbia schizacantha* Pax

Of all the species of *Euphorbia* one of the most sought after by collectors is *Euphorbia schizacantha*. Beauty is in the eye of the beholder, but I think this is rightfully so.

As a species *E. schizacantha* is easily recognizable, for the fusion of the two upper spines is not complete. The tip of this fused main spine is split into a little fork. This little fork is pointing away from the plant, because the two tips make a narrow angle. This feature makes it readily distinguishable from *E. glochidiata*, which also has a split main spine, but with the tips at a right angle with the main spine.

Together with *E. kalisana* and *E. triaculeata* they represent the biggest plants in this group. In the *Euphorbia Journal* (1984) *E. schizacantha* is reported as having a maximum size of about 1.2 metres in height, Pax (1904) reports 1 metre, but Susan Carter (1988) talks about a maximum height of 0.6 metre. M. Gilbert, in his *Flora of Ethiopia and Eritrea* gives a measurement of 30-45 centimetres, with lateral branches of up to 40 cm. Despite these differences, in all cases it is the height of the main stem with the side branches drooping downwards to soil level, which is different from the other species, *E. kalisana* and *E. triaculeata*, which have a very much depressed main stem with side branches reaching more or less for the sky. The size of the main stem makes *E. schizacantha* not the tallest but nevertheless the most impressive species in this group.

*Euphorbia schizacantha* has a very wide natural distribution area, which stretches out from Kenya, Somalia and Ethiopia. In the drier areas in the North it re-

mains smaller and shows a more compact growth. Also the colour of the cyathia is variable, from yellow to dark blood-red. Particularly this latter is a very beautiful form, because also the plant body is covered with red, green and light green patterns in a very showy way.

In quite a few accounts of journeys to the distribution area of this species, *Euphorbia schizacantha* is mentioned. I assume this is not only because it is a beautiful and impressive species, but also because it is fairly widespread and common in nature. This also explains it is an 'old' species and already described in 1894 by Pax. However common it may be in nature, it is rarely encountered in cultivation where it is very hard to please, and which strangely enough adds to its desirability. Even very skilled growers of *Euphorbias* are driven mad by its whims. A very very light and warm place is highly appreciated, but full sun all day long stops the growth, which is not resumed very easily and will lead to the loss of the plant. In the short growing season it likes ample water and in this period it grows rather quickly, though not for a long time. When not in growth, *Euphorbia schizacantha* is killed right away, when given too much (cold) water. Sowing seed of this self fertile species is the surest method of growing typical offspring and seedlings are in the first season relatively easy to grow. Also the cutting-two-times method works for this species in order to get a typical plant with the thick main stem, however this is sometimes denied in literature.

Through its special beauty and tricky cultivation *Euphorbia schizacantha* appeals to the imagination of many *Euphorbia* growers.



Fig. 8: *Euphorbia* species affinis *triaculeata* from Yemen, grown from a cutting taken by the cut-two-times method. It is not 10 cms high. This represents the form which originally came from Eastern Europe



Fig. 9: *Euphorbia schizacantha* in habitat west of Dolo Odo, Ethiopia, normal sized plant in red sandy soil (Picture by Vitezslav Vlk).



Fig. 10: Huge sized *Euphorbia schizacantha* on the same locality as fig. 9 (Picture by Vitezslav Vlck)



Fig. 11: Grafted side-head-cutting of a red flowered form of *Euphorbia schizacantha* in the collection of the author

## *Euphorbia monacantha* Pax

The second *Euphorbia* described by Pax is *Euphorbia monacantha*. The description from 'Engler's Botanisches Jahrbuch für Systematik' of 1904 is rather short and without a picture. Sadly enough this was the case with numerous newly described species at that time and this has led to many misidentified plants among the lesser known species. The name *Euphorbia monacantha* is of all the species names in this group one of the most frequently used on labels, however it is not in cultivation at all. Also the meaning of its name is wrong as well, being the 'one-spined *Euphorbia*'. In fact there are of course one upper main spine above and two little spines below on the spine shield. The latter two are normally designated prickles. All this confusion is caused mainly by the fact that many new undescribed species from this group of plants found their way to collections in the seventies and eighties under the name *E. (spec. aff.) monacantha*.

*Euphorbia monacantha* was found in 1901 by Dr. Ellenbeck at Gorobube on stony flats at 1700 metres above sea level. Gorobube was situated in Arussi County, Gallaland. Of these names today not many references can be found, but nowadays this region is called Bale Province. As far as known (Dr. M. Gilbert, pers. com.) *Euphorbia monacantha* has only once been recollected and apparently it only grows in a very small area.

In the short description of this species by Pax it is described as: 10 – 20 Centimetres high, with yellow cyathia; the single branches less than 4 centimetres long, spines 4 centimetres long and more. There is no mention of a main stem or how thick it can become. I can



Fig. 12: The red flowered form of *Euphorbia schizacantha* proves to be very floriferous and showy too

imagine thick compact plants with very short lateral branches, covered with fierce spines. What a thrill that would be for Euphorbia lovers to cultivate such plants; it would win the popularity contest over *E. schizacantha*.

I have never seen anything like this alive, there is however a picture in the 'Euphorbia Journal' (1987) of a plant coming close to this. In the photo gallery is a plant labelled as Euphorbia species nova Gilbert (Kew 228-83-02608). A compact, densely branched and fiercely spined plant found by Mike Gilbert in Ethiopia. He assumes however these plants belong to *E. actinoclada* and so *Euphorbia monacantha* remains unknown.

N. E. Brown later places another species described by Pax, *Euphorbia xylacantha*, as synonymous under *E. monacantha*. Susan Carter (1992) reinstated *E. xylacantha* as an independent species with an extended description.

For the time being *Euphorbia monacantha* will take a high place on my wish list and plants labelled as *E. monacantha* need closer inspection.

(To be continued)



Fig. 13: The cyathia of this form of *Euphorbia schizacantha* are true crimson red



Fig. 14: *E. spec. aff. monacantha* from Somalia (Picture by Vitezslav Vlk)