

PERIODIC FLOWERING OF SOME ACANTHACEAE ON MT. ELGON

By

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## Introduction

Most species of flowering plants in East Africa flower in relation to the rains, either before, during, or after, but there are some which flower at very long intervals, and then en masse. This phenomenon has been noted before, and is well known in the bamboo (Arundinaria alpina K. Schum.), where the interval between flowerings has been estimated to be as much as 40 years (Wimbush 1945). Again, Fey (1964, p. 55) states "This plant, known to the Kikuyu as Songoya (probably Mimulopsis solmsii Schweinf.) is of particular interest .... Its life span is nine to ten years during which it grows to a height of about twelve feet. It then produces a profusion of pale mauve flowers....." Fey mentions that the plant last flowered in 1953 on the Western Aberdares.

As far as I know, no one has tried to find out why these plants flower at such long intervals, and it might be possible to stimulate interest in this curious and widespread feature of our highland forest plants by records of flowering. Few people have systematically recorded flowering times in East Africa and it is as a contribution to our knowledge of this subject that I write these notes.

## Observations

From 1948 to April 1964 we lived on the north-east slopes of Elgon near the forest boundary. Near the house was a patch of untouched virgin forest. I found it was carpeted with a tangle of plants with soft dark green leaves, and when they flowered I collected the following:-

Barleria ventricosa Hochst. ex Nees  
Hypoestes verticillaris (L.f.) R. Br.  
H. triflora (Forsk.) Roem. et Schultz  
H. aristata (Vahl) Roem. et Schultz  
Isoglossa gregorii (S.Moore) Lindau  
Phaylopsis imbricata (Forsk.) Sweet  
Dicliptera lavata C.B.Cl.  
D. umbellata (Vahl) Juss.  
Justicia flava Vahl

These all flowered regularly each year, but I noticed among them a plant with very different leaves, which did not flower. Each year it grew taller and eventually flowered in December 1952 and January 1953. It proved to be Mimulopsis solmsii Schweinf. By then it was five feet tall and much branched. The flowers were white with a pale brown throat, and came out irregularly a few at a time. The inflorescence was covered with dull red sticky glandular hairs. It flowered in a mass over the whole forest at an altitude of 7,500 ft. to 8,200 ft. and smothered the usual undergrowth Acanthaceae completely. Eventually it died down, and its dead stems covered the ground and all the usual herbaceous plants were buried beneath it. Towards the end of the rainy

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season young seedlings appeared among the rotting stems, and more in the early rains the following year. By the end of 1954 the usual population of Acanthaceae had taken over, though in rather different proportions. Then the plants of Mimulopsis solmsii with their distinctive leaves began to appear again. In October 1961 they began to flower, and there was a mass flowering as before, followed by a similar dying down, and reappearance of the usual plant population. This gives a nine-year interval between one flowering and another, but I shall not be there in 1970 to see if the interval between flowerings is regular.

There is another plant growing on Elgon from about 8,800 ft. to the upper edge of the forest, which also flowers at intervals. Mimulopsis cf. glandulosa (Lind) Bullock non Bak. is rather like M. solmsii in habit, but its flowers are larger and a pretty mauve colour, with a yellow flash on the lower petal and a white throat, darker inside. The stem, calyces and pedicels are covered with dark reddish hairs and it grows to four or five feet. It has one peculiarity, that quite short stems which have been hacked off beside the track or grazed off just outside the upper edge of the forest can still produce a few conspicuous mauve flowers. In January of 1947 when I was ascending Elgon it made a sheet of bloom all over the upper part of the forest. Further mass flowerings occurred in the dry seasons of 1956 and 1964. I also collected it in 1951 but am not sure if that was a mass flowering or only an isolated plant, such as occur very rarely between the mass flowerings. I did not, however, make such careful observations as I was able to do with M. solmsii owing to the distance of the locality from my house.

Mimulopsis arborescens C.B.Cl. is also to be found on Elgon. It is a large plant ten feet tall, with leaves up to nine inches across. Its flowers are cream with a chocolate brown throat and they turn brown when they die. This plant is rare in the area of which I have experience, but it is conspicuous. It is only recently that it has occurred to me that I do not see its flowers every year. I have not had the opportunity to make a continual study of this plant, but I think it would be found to flower at intervals like the others.

I have found the same behaviour in two species of Isoglossa. In the spring of 1951 I sent a specimen to Kew (891) which may prove to be a new species. When asked for more material I had the greatest difficulty in finding it again and regarded it as a rare plant until in January 1953 it made a mass flowering in conjunction with Mimulopsis solmsii and it did the same in the dry season of 1961 to early 1962, again in conjunction with M. solmsii. It has the same soft dark leaves and herbaceous habit as the common Acanthaceae of the forest undergrowth but it is the only one among them to have this mass flowering at intervals. It has a white flower with light brown markings on the petals.

Thirteen miles from this patch of forest is the bridge over the Suam River, where the same sort of forest comes down to 7,000 ft. in the valley of the Suam. Here in September 1959 I found a plant of Isoglossa oerstediana Lindau which I had never seen among the Acanthaceae of my own patch of forest. When visiting the same place in October 1963 I noticed that this plant was making a mass flowering in certain parts of the forest near the river. At the same time I found quite a number of these plants in my own patch of forest where I had never seen it before, but not enough to be considered a mass flowering. It has the same habit as the other Acanthaceae of the forest

undergrowth; the flowers are white shaded with pink and with very small dark maroon calyces.

#### Summary.

Periodic mass flowering has been recorded in Kenya, but dates are rare. Years of mass flowering may be separated by years during which there are no flowers, or flowers may be merely rare in the interval. The following species and dates of mass flowering for Elgon have been recorded in this paper.

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| <u>Mimulopsis solmsii</u>          | Dec. 1952 - Jan. 1953.<br>Oct. - Dec. 1961.    |
| <u>Mimulopsis cf. glandulosa</u>   | Jan. 1947<br>Oct. 1956<br>Jan. 1964            |
| <u>Mimulopsis arborescens</u>      | Dec. 1953 probably periodic but not recorded.  |
| <u>Isoqlossa</u> sp. (Tweedie 891) | Dec. 1952 - Jan. 1953<br>Oct. - Dec. 1961      |
| <u>Isoqlossa oerstediana</u>       | Oct. 1963. probably periodic but not recorded. |

#### References.

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