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Observations on the Teratology of the Genus Peperomia

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In a review of the literature on the subject of teratological formations in plants one finds a comparatively small number of references relative to abnormal development in the genus *Peperomia.* Penzig (Pflanzen-teratologie, vol. III, p. 188, 1922) lists a small number of species in which abnormal inflorescences have been observed. Nothing, however, has been found describing abnormalities in any of the Polynesian members of the genus.

In an extensive study of the species occurring in the Hawaiian islands and southeastern Polynesia, I have examined a large number of specimens both as living plants in the field and as herbarium materials. During this study I have observed several abnormalities which I am now describing as a contribution to our knowledge of the genus. All of the monstrosities which I have found have been associated with the inflorescence and are mostly those commonly known as fasciations and proliferations. In *P. hirtipetiola, P. pallida* variety *rurutensis, P. reflexa,* and *P. sandwicensis* more than one type of abnormal development is reported. Each of these citations represents specimens from different collections.

Peperomia abscondita Moore.

Irregularly and much branched spikes, similar to those illustrated in figure 1, *h,* but not flattened.

Peperomia Anderssonii Yuncker.

Spike branched near the tip, similar to that illustrated in figure 1, *f.*

Peperomia Christophersenii Yuncker.

Spike with a few, short branches arising at the tip of the primary spike, similar to that illustrated in figure 1, *e*.

Peperomia Cookiana C. de Candolle.

Spike with small branches at the tip. The shape of the small leaves and the pubescence on the branches resemble those found on other parts of the plant (figure 2, *b*).

Peperomia Cookiana C. de Candolle variety **flavinerva** (C. de Candolle) Yuncker.

Spike in which the normal petiolate leaves at the base of the peduncle are replaced with a whorl of three small, sessile, bract-like structures. There are also two similar bracts near the tip of the spike (figure 1, *i*).

Peperomia eekana C. de Candolle.

Fruit with three instead of the customary two stigmas (figure 2, *g*).

Peperomia expallescens C. de Candolle.

Proliferous or interrupted and branching spikes. The branching occurs both from the peduncle and from the floriferous region (figure 1, *c*).

Peperomia Gibbonsii C. de Candolle.

Spike branching in the floriferous part near the tip, not flattened (figure 1, *b*).

Peperomia hendersonensis Yuncker.

Branching and flattened spikes. Some of the spikes which branched in the floriferous region were not flattened, while others were distinctly so (figure 1, *k*).

Peperomia hirtipetiola C. de Candolle.

1. Secondary spike arising as a branch off the peduncle of the primary spike (figure 2, *a*).

2. Spike with a flattened end and finger-like branches (figure 1, *j*, 1 and 2 cross sections).

Peperomia lilifolia C. de Candolle.

Spike with a branch arising near the outer end of the floriferous region (figure 1, *f*).

Peperomia Macreana C. de Candolle.

Secondary spikes arising as branches from the peduncle of the primary spike similar to that shown in figure 2, *a*.

FIGURE 1.—Abnormalities in *Peperomia: a, P. reflexa; b, P. Gibbonsii; c, P. expallescens; d, P. mauiensis; e, P. rhomboidea* variety *rarotongana; f, P. lilifolia; g, P. sandwicensis; h, P. pallida* variety *rurutensis; i, P. Cookiana* variety *flavinerva; j, P. hirtipetiola; k, P. hendersonensis.*

Peperomia mauiensis C. de Candolle.

Spike with a branch arising in the floriferous region (figure 1, *d*).

Peperomia pallida (Forster f.) A. Dietrich variety **rurutensis** (F. Brown) Yuncker.

1. Irregularly branched and flattened spike. The flowers are mostly abortive and the bracts near the ends of the branches are somewhat enlarged and clustered (figure 1, *h*).

2. Fasciated spikes, similar to that illustrated in figure 1, *j*.

Peperomia raiateensis Moore.

Two ovaries in one flower instead of the customary single ovary. The flower appeared normal in other respects (figure 2, *d*).

Peperomia rapensis F. Brown.

Spike with several short branches arising at the tip of the primary spike, similar to that illustrated in figure 1, *e*.

Peperomia reflexa (Linnaeus f.) A. Dietrich.

1. Accessory bract-like leaves at the base of the peduncle and also at the base of the floriferous part of the spike. Normally only four leaves occur at the base of the spike in this species (figure 2, *c*).

2. Spike divided near the tip into two nearly equal branches (figure 1, *a*).

Peperomia Reineckei C. de Candolle.

Spike with short branches arising at the tip of the primary spike more or less similar to that illustrated in figure 1, *e*.

Peperomia rhomboidea Hooker and Arnott variety **rarotongana** Yuncker.

Spike with numerous short branches arising at the tip of the primary spike. Neither the spike nor the branches are flattened (figure 1, *e*).

Peperomia rurutana Yuncker.

Spikes branched and flattened similar to that illustrated in figure 1, *g*.

Peperomia sandwicensis Miquel.

1. Flattened spikes with finger-like branches at the tip (figure 1, *g*).

2. Spikes branching near the tip and bearing small but otherwise normal-appearing leaves. Two different collections of this species were seen which exhibited this abnormality (figure 2, *h*).

3. Fruit with three-parted instead of the customary two-parted stigma (figure 2, *f*).

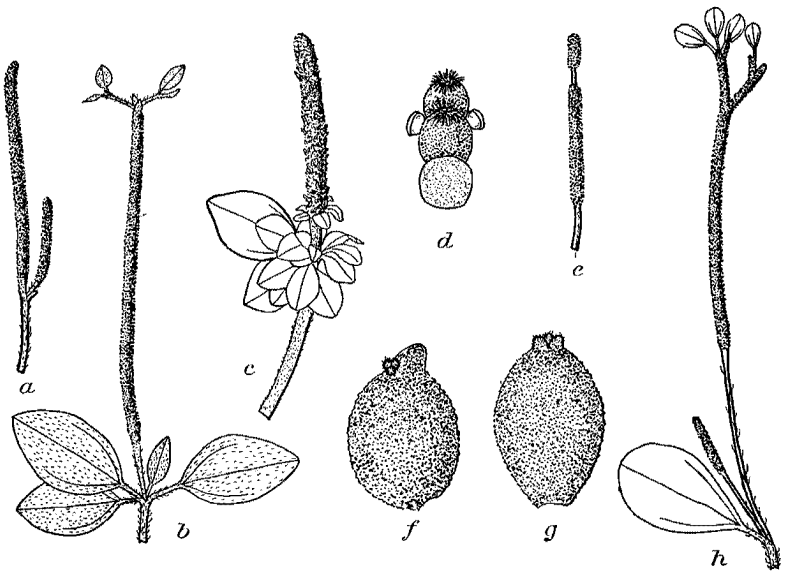

FIGURE 2.—Abnormalities in *Peperomia: a, P. hirtipetiola; b, P. Cookiana; c, P. reflexa; d, P. raiateensis; e, P. Wilderi; f, P. sandwicensis; g, P. eekana; h, P. sandwicensis.*

Peperomia societatis Moore.

Spike branching near the tip, similar to that shown in figure 1, *b*.

Peperomia Wilderi Yuncker.

Interrupted spike (figure 2, *e*).