2. Kazemi, S. and N. P. Kefford. 1974. Apical correlative effects in leaf epinasty of tomato. *Plant Physiol.* 54:512-519.
3. Leather, G. R., L. E. Forrence and F. B. Abeles. 1972. Increased ethylene production during clinostat experiments may cause leaf epinasty. *Plant Physiol.* 49: 183-186.
4. Leopold, A. C., K. M. Brown and F. H. Emerson. 1972. Ethylene in the wood of stressed trees. *HortScience* 7:175.
5. Lyon, C. J. 1963. Auxin transport in leaf epinasty. *Plant Physiol.* 38:576-574.
6. Palmer, J. H. 1973. Ethylene as a cause of transient petiole epinasty in *Helianthus annuus* during clinostat experiments. *Physiol. Plant* 28:188-193.
7. Palmer, J. H. 1976. Failure of ethylene to change the distribution of indoleacetic acid to the petiole of *Coleus blumei* x *frederici* during epinasty. *Plant Physiol.* 58:513-551.
8. Robitaille, H. A. 1975. Stress ethylene production in apple shoots. *J. Amer. Soc. Hort. Sci.* 100:524-527.
9. Snow, R. 1962. Geostrophism. *In* Encyclopedia of plant physiology, Vol. XVII/2, Springer Verlag, Berlin. p. 378-389.
10. Steward, E. R. and Hugh T. Freebairn. 1969. Ethylene, seed germination and epinasty. *Plant Physiol.* 44:955-958.

HortScience. 13(5):596. 1978.

In Vitro Propagation of *Episcia cupreata*[1]

Becky B. Johnson
Department of General and Evolutionary Biology, Oklahoma State University, Stillwater, OK 74074

Additional index words. flame violet, tissue culture

Unlike some gesneriads, such as gloxinia and *Saintpaulia,* where single plants are desired, a larger, more attractive mass of vegetation results when several Episcia plants per pot are used. This requires several cuttings per pot during propagation, increasing costs. An *in vitro* method for producing clusters of plants would thus be useful.

A number of gesneriads, including gloxinia (1) and *Saintpaulia* (2), have been propagated *in vitro.* In this paper and present a method for the *in vitro* propagation of flame violets (*Episcia cupreata* (Hook.) Hanst. cv Silver Queen).

Healthy mature leaves were surface sterilized according to previously reported methods (1) in 70% ethanol for 1 min and 2.75% sodium hypochlorite for 2 min. Explants 1 cm^2 were cut and placed in individual culture tubes on 20 ml of the medium of Murashige and Skoog (3) and kept under Gro Lux lamps at a light intensity of 3 klx with a 16 hr photoperiod at 30°C. Kinetin, was tested in combination with napthaleneacetic acid (NAA) or indoleacetic acid (IAA); concn used were 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, or 1.0 mg/liter for all 3 growth regulators. Thus 100 different combinations of kinetin and IAA and 100 different combinations of kinetin and NAA were tested. When NAA with kinetin was used, little callus formed and some explants formed roots. With kinetin and IAA profuse callus was formed and numerous shoots produced within 6 to 8 weeks. The largest number of shoots was produced on medium with 0.2 mg/liter kinetin and 0.2 mg/liter IAA. Each tube produced 20 to 30 shoots from the initial explant. If the callus was transferred to new medium in larger containers, micropropagation produced several hundred shoots per explant. When shoots were 0.5 cm long, they were transferred to MS media with 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, or 1.0 mg/liter IAA or NAA. Roots did not form with IAA, but formed on all concn of NAA within 1 to 2 weeks.

Clusters of 5 to 10 rooted shoots were transferred to pots and acclimated to lower humidity as previously reported (1). An occasional plant died (<2%) but no abnormal plants developed.

This method has the potential to facilitate propagation of *Episcia* since one leaf can give rise to hundreds of plants and clusters rather than individual plants are desirable.

[1]Received for publication June 27, 1978. This research was supported in part by Plant Cloning Laboratories, Inc., Bartlesville, OK. The cost of publishing this paper was defrayed in part by the payment of page charges. Under postal regulations, this paper must therefore be hereby marked *advertisement* solely to indicate this fact.

Literature Cited

1. Johnson, Becky B. 1978. *In vitro* propagation of gloxinia from leaf explants. *HortScience* 13:149-150.
2. Start, Norah D. and Bruce G. Cumming. 1976. *In vitro* propagation of *Saintpaulia ionantha* Wendl. *HortScience* 11: 204-206.
3. Murashige, Toshio and Folke Skoog. 1962. A revised medium for rapid growth and bioassays with tobacco tissue cultures. *Physiol. Plant.* 15:473-479.

HortScience. 13(5):596–597. 1978.

Germination of *Spathiphyllum* and *Vriesea* Pollen after Storage at Different Temperatures and Relative Humidities[1]

R. J. Henny[2]
Agricultural Research Center, IFAS, University of Florida, Apopka, FL 32703

Additional index words. Spathiphyllum floribundum, Vriesea malzinei

Abstract. **Pollen of *Spathiphyllum floribundum* (Linden & Andre) N. E. Br. 'Mauna Loa' and *Vriesea malzinei* E. Morr. was stored at 7° and 23°C at relative humidities of 10, 35, 65 and 90%. Optimum pollen germination of both species occurred after storage at 7°C and 65% relative humidity. Germination decreased rapidly at 23°C regardless of relative humidity.**

Although there is increasing interest in breeding foliage plants, flowering has not been controlled for many of these tropical species. Thus, pollen storage would facilitate hybridization of species which flower at different times. Several studies (1, 3, 4, 6, 7, 8, 9) have demonstrated the effect of temp and humidity on pollen viability during storage, but none included pollen from tropical foliage plants. *Spathiphyllum floribundum* 'Mauna Loa' and *Vriesea malzinei* represent 2 important families of foliage plants (Araceae and Bromeliaceae, respectively) and have pollen

[1]Received for publication May 18, 1978. Florida Agricultural Experiment Stations Journal Series No. 1179.
The cost of publishing this paper was defrayed in part by the payment of page charges. Under postal regulations, this paper must therefore be hereby marked *advertisement* solely to indicate this fact.
[2]The technical assistance of Mrs. Eleanor Rasmussen and the donation of pollen by Bamboo Nursery is gratefully acknowledged.