slides over the barrel of the microscope and holds the cell flat against the ocular lens or the end of the lens barrel if the ocular lens is not used. All the light passing through the optical system of the microscope is intercepted by the cell. The camera speed is adjusted to fit the light intensity, or the light intensity is regulated by rheostat or diaphragm to conform with a desired film velocity. The cell is then removed and the camera lowered into place and the apparatus is ready for use.

The unit is subject to the same limitations as the usual exposure meter. The deflection represents the average of all the light intensities present and is satisfactory when calibrated for the kind of work in question by photographic test.

The use of a photoelectric device for the measurement of light values in photography is well established. The principles have been adapted to cinephotomicrography in the unit above described. The total cost of such a unit is less than $30.00 and soon pays for itself in the saving of film and time.

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LONGEVITY OF PLANT CELLS IN TISSUE CULTURES

THAT certain cells in plants may live for long periods is well known, and Bailey[1] has shown that the cells in a section of cambium mounted in lactose or in liquid petrolatum may continue active cyclosis for weeks. In the course of recent work I have observed numerous examples of a surprising length of survival of plant tissues. Various parts of flowers were detached and placed in sterile culture on nutrient agar. Some of these parts have undergone no regeneration and have shown no significant growth but have lived many times as long as similar structures on normal plants. Examples of this are shown in the following Table 1.

TABLE 1
LENGTH OF LIFE OF PLANT STRUCTURES IN CULTURE

Species	Structure	Time of survival in days
Tulipa Gesneriana	Petal	206
Jasminium fruticosa	"	186
"	Ovary	236
Erythronium americanum	Ovule	273
Freesia refracta	Sepal	190
Reinwardtia indica	Petal	255
Caltha palustris	"	255
Calendula officinalis	Corolla	277
Scirpus americanus	Section of culm	191
Tradescantia paludosa	Petal	365
" "	Sepal	365
" "	Stamen	365

[1] I. W. Bailey, *Zeitschr. Zellforsch.*, 10: 651–682, 1930.

Most of the structures listed in Table 1 were still vital at the end of the recorded period and might have lived longer.

The cells of *Tradescantia paludosa* were most remarkable. The petals and sepals of this plant are ephemeral and usually live only a day or two after flowering, but in culture they remained alive for an entire year. Cells of these petals and of stamen hairs were plasmolyzed with a sucrose solution. When the sucrose solution was replaced by water many of the cells recovered promptly, although others did not. Active cyclosis was not seen in any of the cells. Pieces of Tradescantia petal 0.5 mm × 1 mm were still alive.

The cultures were made in ½ ounce bottles with bakelite caps which were tightly closed. It is doubtful whether reduced respiration resulted because the amount of inclosed air has been shown to be sufficient for growth and regeneration of masses of tissue much larger than any of these.

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