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Regenerated Herbarium Material for Biosystematic and Cytological Studies.—Certain mosses are well known for the ability to regenerate from long-dried collections. However, only a few researchers, notably those in the United Kingdom who have worked with moss tubers and other resistant organs, have used herbarium specimens to provide living material for culture studies. In a survey of more than 100 herbarium specimens of various taxa of Pottiaceae (Bryopsida) at BUF, I found that about half of them will produce new growth in culture. Only plants from packets less than five years old were tested. A few stems from each packet were placed into small bottles or plastic boxes on horticultural grade perlite moistened with distilled water or $\frac{1}{4}$ strength Hoagland's Solution. The vessels were sealed to retain evaporation and placed near a laboratory window, but shielded from direct sunlight.

Upon regeneration the stems continue apical growth or produce new lateral branches, seldom only protonema. Fungal contamination was minimal. More than 30 taxa, many of them exotic, are now in cultivation, including species of *Anoetangium*, *Barbula*, *Desmatodon*, *Didymodon*, *Gymnostomum*, *Hymenostylium*, *Leptodontium*, *Molendoa*, *Oxystegus*, *Pleurochaete*, *Pseudocrossidium*, *Tortella*, *Torula* and *Trichostomum*. Many of the non-regenerable herbarium specimens had probably been treated with heat or chemicals sub-

sequent to collection. Taxa with characteristic reddish coloration of the leaves typically show no growth, at least not under these conditions. Small "common garden" arrangements have been initiated to study responses of two or more closely related taxa to similar environments. Cytological study, such as mapping the distribution of chromosome races, should be possible without laborious field work—mitotic figures are easily seen in stained embryonic leaves of new growth. Regeneration of new stems on perlite is simple, inexpensive and does not require axenic methods or unreasonable space. It is much faster than obtaining gametophores from protonemata, since new branches with 15 or more leaves are often produced within 1–2 months. Possible developmental influences must be taken into account when new branches from herbarium material are studied and subsequent axenic cultivation of tissue from single plants may be needed for certain critical experiments. Herbarium fumigants may influence morphology or cytology of the specimens used. The ready availability of living material from the herbarium gives the Pottiaceae unusual potential for biosystematic studies. This may also be true for other bryophyte taxa that are commonly desiccated in their natural habitat.—R. H. ZANDER, *Buffalo Museum of Science, Buffalo, NY 14211*.