A NOTABLE SPECIES OF GYMNOSPORANGIUM FROM COLORADO

FRANK D. KERN

While collecting fungi in the vicinity of Trinidad, Colorado, on May 20, 1908, the writer came upon a moderate sized tree of *Sabina monosperma,* affected with what appeared to be some small species of *Gymnosporangium.* The sori were just breaking forth between the scale-like leaves (Fig. 1, *a*) in a very inconspicuous manner much after the style of *G. inconspicuum,* a species recently described by the writer and previously collected only in the vicinity of Glenwood Springs on *Sabina utahensis.* So striking, in fact, was the resemblance to *G. inconspicuum* in general appearance and habit, that there was at first examination not the slightest suspicion that it wonld turn out to be another thing. Thinking that the range of a hitherto little known species would be considerably extended, and another host added, it was with especial delight that a collection was made. It was evident that germination had not yet taken place and a small quantity of material was immediately sent in to the laboratory by mail, to be kept fresh by putting the branches in water, with the hope that some cultures might be made.*

After returning to the laboratory several days later, a microscopical examination was made and it was then learned that the supposition entertained in the field was incorrect, and that a new and distinctive species had been discovered.

The spores of the Trinidad specimen are thick-walled, considerably constricted at the septum, rounded both above and below, and have a pedicel of uniform, relatively small diameter, while those of *G. inconspicuum* are thin-walled, not at all or only slightly constricted, narrowed above, and have a carotiform pedicel of considerable thickness just below the spore.

* It may be recorded here that this was subsequently sown upon *Crataegus* and *Amelanchier* without infection. Although the material seemed to be in good condition, no germination of the spores was observed either in drop cultures or in the sori that were employed for the attempted cultures.

It is, however, in the number and location of the germ pores that the new species is especially notable. It has from five to seven large, scattered pores in each cell (Fig. 1, *b*). No other species of *Gymnosporangium* has ever been observed by the writer with more than two germ pores. A number of species have been reputed to have four in each cell,* but on very careful examination the writer has never been able to verify this assertion. Seven seems to be the usual number in the species under

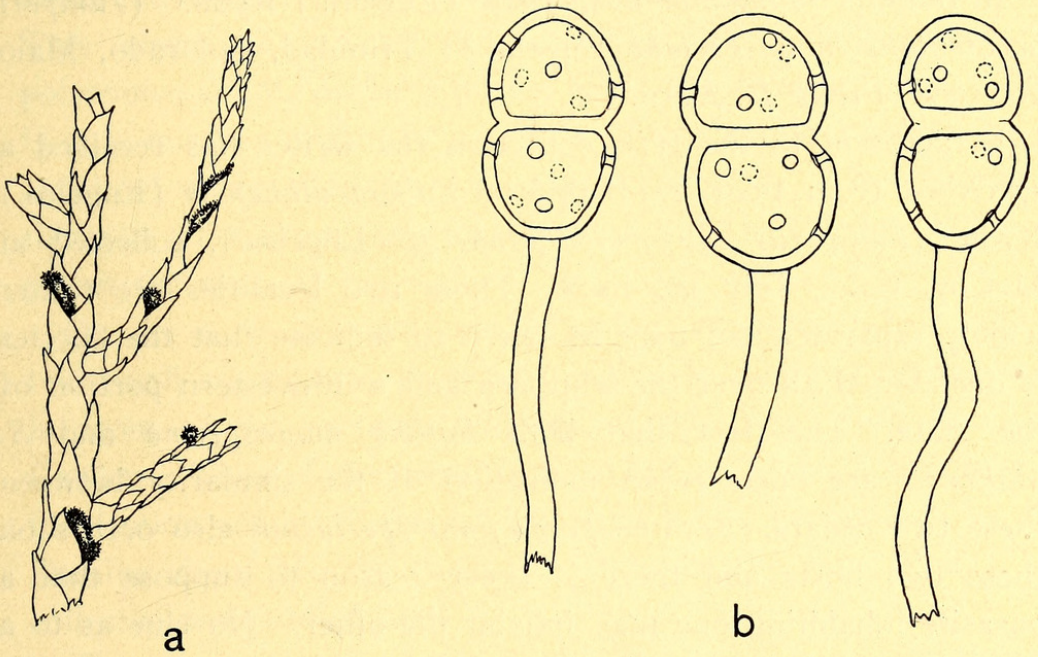

FIG. 2. *a*, Portion of green branch showing manner in which the sori break forth between the scale-like leaves; about three times natural size. *b*, Three teliospores showing outline, uniformly thick walls and size and location of the many pores, × 468.

discussion, although a few were observed where only five or six could be found. The fact that the pores are scattered is also significant. In all other species of the genus they have some definite arrangement, such as, near the septum in both cells, or apical in the upper, and sometimes near the pedicel in the lower cell. It may be further noted here that this character of numerous scattered pores in the teliospores is not only new to the genus *Gymnosporangium* but has never been known in any genus of the family Aecidiaceae, which includes such well-known genera as *Puccinia, Uromyces* and *Phragmidium.*

* See Farlow, Anniv. Mem. Boston Soc. Nat. Hist., The Gymnosporangia or Cedar-apples of the United States, pp. 13, 17, 18, 23. 1880.