

NOTES

Stalked Sporangia of *Polyangium rugiseptum*

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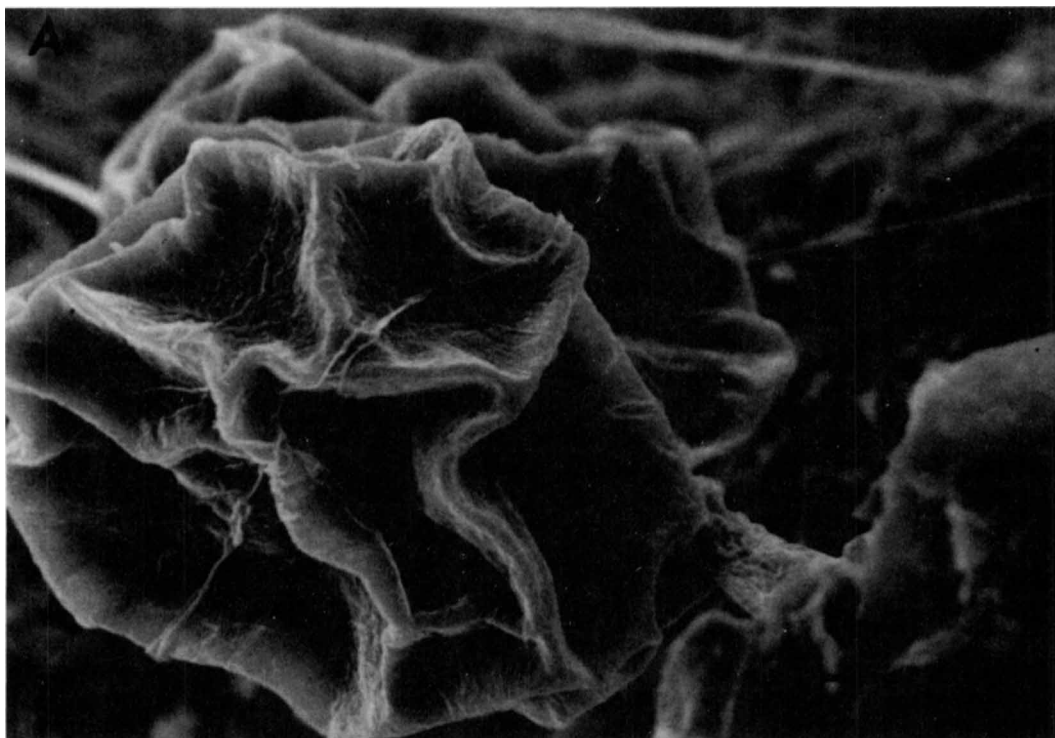
Although most fruiting bodies (sporangia) of *Polyangium rugiseptum* are sessile and correspond accurately to the original species description, a microscopic examination of more than 1,000 sporangia revealed the presence of stalked forms in 2.3% of the specimens.

Peterson (2) described a fruiting myxobacterium found on the bark of living trees as "*Haploangium rugiseptum*." The major distinguishing characteristics which he noted for this species were that its fruiting bodies or sporangia were solitary and sessile. This species was later assigned to the genus *Polyangium* (1). A main criterion used to distinguish the genus *Polyangium* from the genus *Chondromyces* (both genera belong to the family Polyangiaceae) is that the sporangia of *Polyangium* species are sessile, whereas those of *Chondromyces* species are stalked.

Reflected light stereomicroscopy (magnifications, $\times 50$ to $\times 200$) was used to examine 1,040 fruiting bodies of *Polyangium rugiseptum*. The specimens used were obtained by one of us (J.E.P.) from trees in Missouri (*Quercus nigra*,

Juglans nigra, and unidentified species) and are now maintained in the myxobacterial herbarium collection at Central Michigan University. A total of 24 (2.3%) of the sporangia examined were stalked and did not correspond to the species description.

Small pieces of bark bearing air-dried, unfixed fruiting bodies were mounted on stubs with copper conducting tape and Tube Kote (G. C. Electronics, Inc., Rockford, Ill.). The specimens were coated with gold to a thickness of 15 to 20 nm in a sputter-coating device and observed with a model AMR 1200 scanning electron microscope (Advanced Metals Research, Bedford, Mass.) operated at an accelerating voltage of 25 kV. The fruiting bodies were viewed and photographed at a 45° tilt angle.



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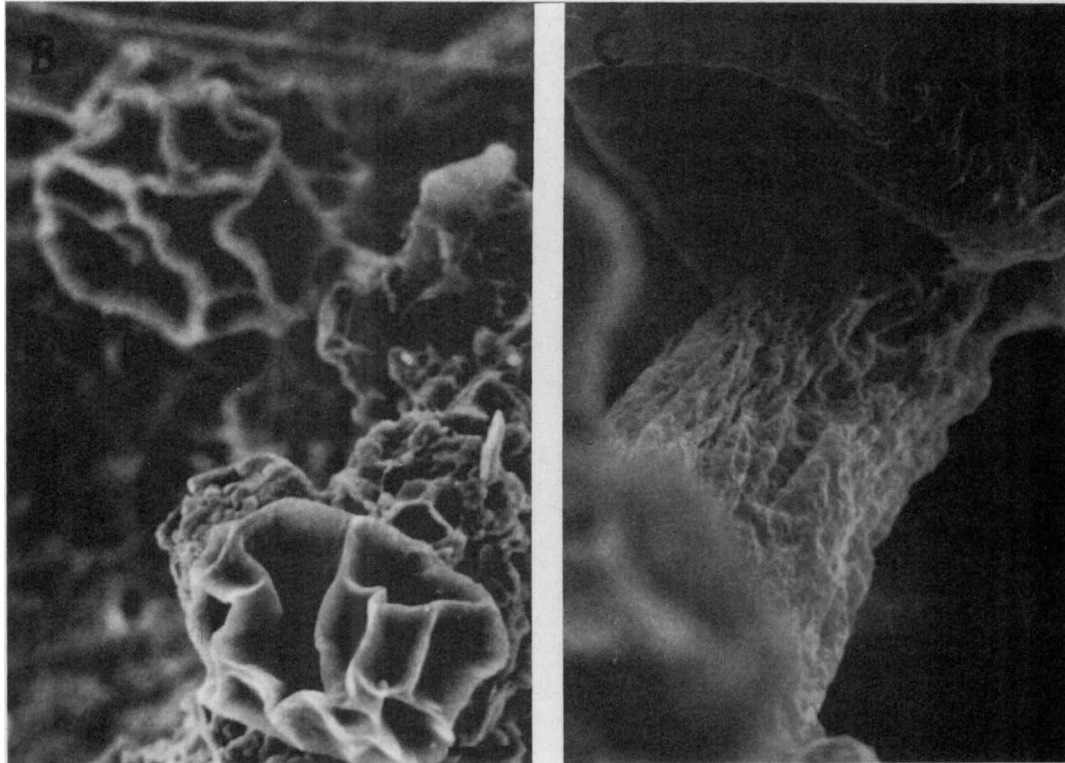


FIG. 1. *P. rugiseptum* sporangium morphology. (A) Stalked, mature sporangium. Bar = 30 μm . (B) Stalked (upper) and sessile (lower) sporangia. Bar = 10 μm . (C) Stalk of the sporangium shown in (A). Bar = 5 μm .

As shown in Fig. 1, the dry sporangia of *P. rugiseptum* were globose to oval, definitely walled, heavily wrinkled, and measured 75 to 110 by 110 to 140 μm . They were solitary and predominantly sessile; however, stalked forms were observed (Fig. 1A and the upper sporangium in Fig. 1B). The stalks appeared to have a rough, wrinkled surface texture which was probably an artifact caused by the drying of the fruiting body. The stalk (Fig. 1C) was 13 μm in diameter and approximately 20 μm long.

Future descriptions of *P. rugiseptum* should reflect that although most of the sporangia are sessile, stalked forms may also occur. It must be emphasized that the stalk may not be readily discernable by low-magnification stereomicroscopy. However, this structure is easily observed by scanning electron microscopy, provided that a tilt angle is used that enables the observer to view the lower portion of the

heavily wrinkled sporangium.

The occurrence of stalked sporangia at a low frequency may not constitute a major characteristic for this species that would warrant its removal from the genus *Polyangium*. However, the presence of the stalk should be noted as a minor trait, at least, within the description of the species, and the description of the genus *Polyangium* should also encompass this characteristic.

LITERATURE CITED

1. Buchanan, R. E., and N. E. Gibbons (ed.). 1974. Bergey's manual of determinative bacteriology, 8th ed. The Williams & Wilkins Co., Baltimore.
2. Peterson, J. E. 1959. A monocystic genus of the Myxobacterales (Schizomycetes). *Mycologia* 51:1-8.