A full account of these observations will appear elsewhere.

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Campestrin, the Antibiotic of *Psalliota campestris*

Atkinson[1] has obtained an antibiotic from *Psalliota xanthoderma* which she has recently named 'psalliotin'. In 1946 and 1949 she gave an account of the potency of this antibiotic substance against Gram negative and some Gram-positive bacteria. So far, the substance awaits purification. She advocates darkness or yellow light during the extraction process, as she has found that the antibiotic substance in crude form is very sensitive to different types of light.

In 1952 and 1953 I published[2] a somewhat detailed account of the antibacterial action of *Psalliota campestris* (L.) Fries, the common edible mushroom. This is readily available in Calcutta markets during the rainy season. *Psalliota xanthoderma* is also edible; but it is regarded as somewhat poisonous and toxic to some persons according to the publication of the Ministry of Agriculture and Fisheries, Great Britain, where it is recorded as: "it is suspicious in character and is known to have caused illness in some cases". Elaborate animal experiments showed that the crude filtrate of *Psalliota campestris* is completely non-toxic. Clinical trials in typhoid cases in the Carmichael Medical College Hospital gave encouraging results. Partial concentration of this crude filtrate was carried out by absorption on activated charcoal ('Darco' brand) and subsequent elution with 80 per cent ethyl alcohol. This concentrated solution showed much higher potency both by the agar-cup method and serial dilution test. It was also used with very favourable results in 1 c.c. ampoules administered intramuscularly in seven severe typhoid cases in the typhoid ward of the Hospital, supplemented by oral administration of the crude filtrate. Attempts are being made to purify it further. I propose to name the active substance 'campestrin', derived from the local *Psalliota campestris*.

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Germination of Chlamydospores in the Endogonaceae

No reports have been published of the germination of zygospores or chlamydospores in the Endogonaceae. Thaxter[1], writing in 1922, stated that no success had followed attempts to germinate the spores in any member of the group, and he mentioned his own unsuccessful efforts with the zygospores of *Endogone pisiformis* Link.

Since September 1953, repeated attempts have been made to germinate chlamydospores of *E. macrocarpa* (Tul.), Tulasne and *E. microcarpa* (Tul.), Tulasne, and zygospores of *E. lactiflua* Berk. No success has been obtained with the latter; but chlamydospores of both the former species have been observed to germinate on plain agar.

Spores of *E. macrocarpa* from certain fruit-bodies among those collected in the autumn of 1953 were successfully germinated. Some germinated at once and others after an interval of several months, during which time they were stored in soil. Those of *E. microcarpa*, collected at the same time, were first observed to germinate when plated out in the following spring. Spores from fruit-bodies of *E. macrocarpa* collected in 1954 have failed to germinate when placed under similar conditions, but germination of *E. microcarpa* spores has been observed at intervals during the year.

The spores which germinated were derived only from a few fruit-bodies among numerous collections, and often represented but a small proportion of the spores in those fruit-bodies. No stimulation of germination was achieved by a wide range of treatments, including alternate wetting and drying, mechanical rupture of the spore wall and exposure to extremes of heat and cold. It seems likely, therefore, that the percentage germination is a function rather of the state of the fruit-body than of the environment.

The mode of germination of the chlamydospores is illustrated in Fig. 1. The hyphæ which grow out from the spores are very similar in the two species,

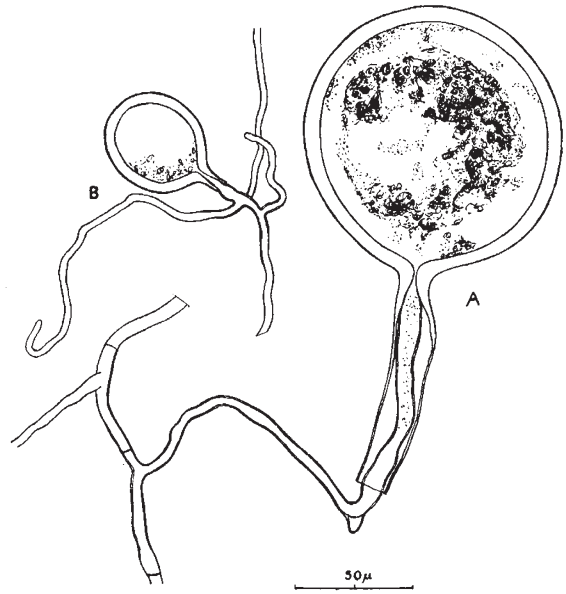

Fig. 1. Germinating chlamydospore of (*A*), *E. macrocarpa*, (*B*), *E. microcarpa*