

organism. In the school year of 1931-32 seventeen cases reported for treatment at the clinic and in the year 1932-33 only 14 cases, out of a student population of approximately 3,000. We have been unable to trace any infection to a focus about the Institute. The fact that the students diligently use foot baths and care for their feet so well may be a factor in the comparative rarity of the disease.

7404 C

Effect of Glycerine on the Growth of Certain Pathogenic Fungi.

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In studying a group of fungi the inhibitory effects of varying concentrations of glycerine were tabulated from the point of view of possible differential features. Glycerine was incorporated in Sabouraud's proof medium and the pH adjusted to 5.5. Concentrations of 1, 5, 10, 15, 20 and 25% were used.

Growth of the following pathogenic fungi and the 2 saprophytes, *Lichtheimia* sp. and *Scopulariopsis brevicaulis*, was observed over a period of 30 days: *Achorion schoenleinii*, *Acladium castellani*, *Candi-*

TABLE I.
Glycerine in Sabouraud's Proof Media.

	0%	1%	5%	10%	15%	20%	25%
<i>Achorion schoenleinii</i>	3	5	5	5	7d	7d	21s
<i>Acladium castellani</i>	3	5	5	5	5	5d	5d
<i>Candida candida</i>	3	3	3	3	3	3	3
<i>Endodermophyton tropicale</i>	5	5	5	7	7d	7d	—
<i>Endomyces capsulatus</i>	5	5s	5s	7s	7s	—	—
<i>Endomyces dermatitidis</i>	5	5	5s	7s	7s	—	—
<i>Epidermophyton inguinale</i>	3	3	3	3	7s	14s	—
<i>Glenospora gammeli</i>	5	7s	7s	7s	14s	—	—
<i>Geotrichum bachmann</i>	3	3	3	3	3	3	—
<i>Indiella americana</i>	3	5	5	5	—	—	—
<i>Lichtheimia</i> sp.	3	3	3	3	3	3	5
<i>Monilia albicans</i>	3	3	3	3	3	3	3
<i>Microsporon apiospermum</i>	3	3	3	7	7s	—	—
<i>Microsporon audouini</i>	3	3	3	3	14	30s	30s
<i>Oöspora humi</i>	3	3	3	3	3	3	—
<i>Scopulariopsis brevicaulis</i>	3	3	3	3	3	3	3
<i>Trichophyton crateriforme</i>	3	3	3	3	7s	7s	—
<i>Trichophyton granulosum</i>	3	3	3	3	5	7	—
<i>Trichophyton interdigitale</i>	3	3	3	3	3	5	8
<i>Trichophyton japonicum</i>	3	3	3	3	5	5	14s
<i>Willia anomala</i>	3	3	3	3	3	3	3s

da candida, *Endodermophyton tropicale*, *Endomyces capsulatus*, *Endomyces dermatitidis*, *Epidermophyton inguinale*, *Glenospore gammeli*, *Geotrichum bachmann*, *Indiella americana*, *Monilia albicans*, *Microsporon apiospermum*, *Microsporon audouini*, *Oöspora humi*, *Trichophyton crateriforme*, *Trichophyton granulosum*, *Trichophyton japonicum*, *Trichophyton interdigitale*, *Willia anomala*.

Table I gives the days within which growth was observed. The *d* indicates a marked decrease in the amount of growth, and *s* a scant growth.

Achorion schoenleinii in addition to developing a smaller colony with increase in concentration of glycerine, became more translucent in concentrations of 15% and above.

Acladium castellani gradually lost its color with increase in concentration of glycerine, becoming less granular and more waxy in appearance.

Candida candida gradually became more translucent with increase in concentration of glycerine.

Endodermophyton tropicale with increase in concentration of glycerine lost its granular white appearance and became more translucent.

Endomyces capsulatus became increasingly more translucent, its mycelia becoming subsurface.

Endomyces dermatitidis. The mycelia became increasingly more sub-surface, starting to a marked degree with the 1% concentration of glycerine.

Epidermophyton inguinale. The growth became less marked and more transparent as concentration of glycerine increased.

Glenospora gammeli. There was immediate inhibition of growth with 1% glycerine, the mycelia becoming subsurface.

Geotrichum bachmann took on a more frosted appearance as concentration of glycerine increased.

Indiella americana. The colonies took on a radiating character in the 10% concentration of glycerine with a center and rim of fine white mycelia.

Lichtheimia sp. The mycelia became more sparse so that a surface sheen became apparent.

Monilia albicans became less latticed in appearance and more transparent as concentration of glycerine increased.

Microsporon apiospermum with increased concentration (5 and 10%) of glycerine developed a more pronounced black base, the

mycelia finally becoming grey and losing the white appearance seen on Sabouraud's.

Microsporon audouini. Growth became coarse, granular, white and scant in 15% concentration of glycerine with mycelia largely subsurface.

Oöspora humi became more transparent, waxy and granular as concentration of glycerine increased.

Scopulariopsis brevicaulis beginning with the 5% concentration gradually lost its tan color, becoming white, finely granular, opaque, wrinkled, with a few white tufts of mycelia confined close to the surface of the media.

Trichophyton crateriforme became more wrinkled with mycelia largely subsurface.

Trichophyton granulosum. Colonies became more individual.

Trichophyton interdigitale. This organism which showed pleomorphism to a marked degree developed a red hue in the 10% concentration, became more granular and surface wrinkled in the 20 and 25% concentrations.

Trichophyton japonicum. There was a decrease in growth until in 20% glycerine only a few mycelia were observed on a frosted surface and sparse subsurface mycelia in 25% glycerine.

Willia anomala became more waxy with a decrease in concentration of glycerine.

In general, there was considerable variation in the inhibitory power of glycerine.

Grigorakis¹ made observations on the growth of *Microsporon felinum*, Fox and Blaxall (*Closterospora felineu* Grigorakis) and *Trichophyton asteroides* Sabouraud (*Spiralia asteroides* Grigorakis) on a medium containing glycerine (most observations on a medium with a concentration of 4% glycerine). They noted increase in "degradation through pleomorphism". Our colonies, we felt, showed less pleomorphism as concentration of glycerine was increased with the possible exception of the 1% concentration. Microscopic changes due to glycerine will be the topic of a future paper.

¹ Grigorakis, L., *Compt. rend. Soc. de biol.*, 1931, **108**, 94.