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Scalp Products and Hair of Men and Women as Culture Media for Certain Pathogenic Fungi.*

JOHN W. WILLIAMS.

From the Homberg Memorial Infirmary and the Department of Biology and Public Health, Massachusetts Institute of Technology.

A study was made of the growth of pathogenic fungi on hair and scalp products before puberty, as collected and after extraction with ether in a Soxhlet for 24 hours.[1] A similar study of hair and scalp products of men and women is here reported. Care was taken that this hair was clean, untreated and undyed. The hair of numerous individuals of different ages was mixed. About 6 cc. of hair was placed in test tubes, covered with distilled water, the tubes plugged with cotton and autoclaved.

The following pathogenic fungi and 2 non-pathogenic saprophytes *Lichthemia sp.* and *Scopulariopsis brevicaulis* were studied: *Achorion schoenleinii, Acladium castellani, Candida candida, Endodermophyton tropicale, Endomyces capsulatus, Endomyces dermatitidus, Epidermophyton cruris, Epidermophyton inguinale, Glenospora gammeli, Geotrichum bachmann, Indiella americana, Microsporon audouini, Microsporon felincum, Microsporon gypseum, Monosporum apiospermum, Monilia albicans, Oöspora humi, Sporotrichum schenkii, Trichophyton crateriforme, Trichophyton granulosum, Trichophyton gypseum asteroides, Trichophyton gypseum lacticolor, Trichophyton interdigitale, Trichophyton japonicum, Trichophyton niveum, Trichophyton sulfureum, Willia anomala.*

In reporting results W is used to designate women's hair, M men's, EW extracted women's hair, EM extracted men's. All organisms studied showed growth on our stock 4% peptone, 1% dextrose, 1½% agar medium in 3 days. Growth was at room temperature in diffuse light.

Acladium castellani, Candida candida, Geotrichum bachmann, Lichtheimia sp., Microsporon felineum, Microsporon gypseum, Monilia albicans, Oöspora humi, Sporotrichum schenkii, Trichophyton granulosum, Trichophyton gypseum asteroides, Trichophyton gypseum lacticolor, Trichophyton interdigitale, Trichophyton japonicum, Trichophyton niveum, Willia anomala showed growth on all hair media in 3 days. *Endodermophyton tropicale, Epidermophyton*

* Contribution No. 45 from the Department of Biology and Public Health, Massachusetts Institute of Technology, Cambridge, Mass.

[1] Williams, John W., PROC. SOC. EXP. BIOL. AND MED., 1934, **31**, 944.

cruris, Epidermophyton inguinale, Glenospora gammeli, Microsporon audouini, Monosporum apiospermum, Trichophyton crateriforme, Trichophyton sulfureum showed growth within 8 days. On W and M *Endomyces capsulatus, Endomyces dermatitidus* and *Indiella americana* showed good growth in 8 days and on EW and EM scant growth in 18 days. On W and M *Scopulariopsis brevicaulis* showed good growth in 3 days and on EW and EM good growth in 10 days (saprophytes of the groups Actinomyces, Alternaria. Aspergillus, Fusarium, Homodendron, Mucor and Penicillium were checked and showed good growth on all media in 3 days). *Achorion schoenleinii* showed good growth on EW and EM in 3 days and scant growth on W and M in 10 days. No growth of the latter organism had been noted on children's hair.[1]

No inhibition of growth of *Microsporon audouini* was noted on any of the media as one might expect because of lack of pathogenicity of this organism for scalps of adults. Future work will be directed toward isolation of fungi from healthy scalps under the assumption that infection may be spread by scratching or allergy result from absorption or inhalation of the organismal specific substances.

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III. Effect of Dyes on Colonies of Certain Pathogenic Fungi.*

JOHN W. WILLIAMS AND LEO GREEN.

From the Department of Biology and Public Health and the Homberg Memorial Infirmary, Massachusetts Institute of Technology.

Observations were made on growth and coloring of colonies of certain pathogenic fungi cultured on a medium (4% peptone, 1% dextrose, 1½% agar, pH 5.6) containing alcoholic nigrosine, litmus, eosin Y and eosin B, respectively.[1, 2]

In the work here reported 5 batches of a similar medium containing the following percentages of dyes† respectively, 2% fluores-

* Contribution No. 46 from the Department of Biology and Public Health, Massachusetts Institute of Technology, Cambridge, Mass.

[1] Williams, John W., PROC. SOC. EXP. BIOL. AND MED., 1934, **31**, 1173.

[2] Williams, John W., PROC. SOC. EXP. BIOL. AND MED., 1934, **31**, 1174.

† Fluorescein, Schultz No. 585, Lot No. 6054. Eosin Y, Schultz No. 585, Batch E-7. Methyl Blue, Lot No. 3421. Janus Green, C. I. No. 133. Neutral Red, Lot No. 7272. Wright's Stain, NWr-7. All manufactured by National Aniline and Chemical Company, New York.