60 minutes' exposure is almost as effective as that after 120 minutes.

From Table I it is clear that 3 facts stand out very obviously. First, the gonococcus is particularly sensitive to the photodynamic action of the various dyes. This is not only in sharp contrast to the gram-negative bacilli but also to the closely related species such as meningococcus and *Micrococcus catarrhalis* which are more resistant than the gonococcus.[4, 5] Secondly, the effectiveness of the absorbed light in setting up the photodynamic action of the different dyes is almost as good as that of the unfiltered light. The only exception to this is found in the trypaflavine in which the unfiltered light is particularly effective, so much so that it even can bring about a complete destruction of gonococcus at the dilution of $1:10^{10}$ at the end of 60 minutes' exposure. Lastly, each of the dyes has its special absorption-band in the spectrum. Thus for methylene blue and trypaflavine, the orange rays are the most effective and in the eosin, the green and light blue rays are the effective parts. For mercurochrome the orange, yellow, and violet rays seem to act equally well.

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Potassium Tellurite and Copper Sulphate in Sabouraud's Medium for Isolation of Pathogenic Fungi.

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In the isolation of pathogenic fungi, one of the principal difficulties is the occurrence of bacterial contamination. This is particularly true when dealing with scales and crusts which are usually loaded with saprophytic bacteria. In trying to overcome this difficulty we have found potassium tellurite and copper sulphate to be of value as by incorporating them into Sabouraud's medium they are found to be capable of suppressing the growth of bacteria but not that of fungi. In reviewing the literature, we have been able to find few reports in which chemicals were incorporated in Sabouraud's medium for the inhibition of contaminants. Sauthof[1] found

5 T'ung, T., PROC. SOC. EXP. BIOL. AND MED., 1935, **33**, 328.

1 Sauthof, Z. G., *Dermat. Wchnschr.*, 1935, **101**, 1245.

TABLE I.
Isolation of Fungi on Plain and Medicated Sabouraud's Medium.

Materials used for cultivation	No. of specimens cultured	No. of specimens from which fungi isolated: No bacterial contamination of inoculum			With bacterial contamination of inoculum			No. of specimens from which fungus was not isolated, inoculum overgrown by bacteria		
		A	B	C	A	B	C	A	B	C
Scale	15	15	15	0	0	0	10	0	0	5
Crust	12	12	11	0	0	1*	6	0	0	6
Hair	23	23	23	0	0	0	18	0	0	5

A = Sabouraud's medium plus potassium tellurite.
B = " " " copper sulphate.
C = Plain Sabouraud's medium.
* = Unidentified gram-negative bacillus.

that with stock cultures, 1-2% of yatren in Sabouraud's medium was able to inhibit the growth of staphylococcus but not of fungi. In our study the experimental material was taken directly from lesions of fungous infections since it seemed more practical to work with actual specimens than with stock cultures. The details of this study are presented below.

Different concentrations of potassium tellurite and copper sulphate were incorporated into Sabouraud's medium on which materials such as hairs, scales, and crusts taken directly from lesions of known fungous infection were heavily inoculated. Plain Sabouraud's glucose-agar was used as control. The inoculated tubes were kept at room-temperature and observations were frequently made. The suitable concentrations of these chemicals in Sabouraud's medium for this work were found to be 0.015% and 0.05% for potassium tellurite and copper sulphate respectively. The results of the culture are presented in Table I.

Besides the data presented it may be mentioned that the fungi isolated in this study were *Trichophyton violaceum, Microsporon ferrugineum, Achorion schönleini, Epidermophyton rubrum,* and *Epidermophyton inguinale.* It was noted that *Achorion schönleini* was more resistant and could stand a higher concentration of the chemicals than the others. On the Sabouraud's medium with 0.02% of potassium tellurite, the isolation of *Achorion schönleini* from *favus scutala* was usually quite easy while with the same medium, the growth of other species from hairs or scales was frequently retarded. With copper sulphate, the *Achorion schönleini* could grow very well in a concentration of 0.06% while the others were found to grow best in the concentrations of from 0.04 to 0.05%.

From Table I, it is clear that Sabouraud's medium with the addition of potassium tellurite or copper sulphate for primary isolation of fungi is definitely superior. It not only gives more positive cultures but also saves medium and labor, as with these media it is not necessary to inoculate so many tubes from a single specimen as is usually done. With potassium-tellurite medium it was found that the initial growth of the different species of fungi all became black in color. However, on microscopic examination no morphological changes were observed. Furthermore, after transfer to plain Sabouraud's medium, all the usual colonial appearances and color-characteristics were resumed. Therefore, there is no interference with the final identification.