they might be trapped in the demonstrated tubular structure of the chrysotile we have used. For a carcinogenic effect to be exerted, the active agent must remain in contact with the cells or tissue for a considerable period[3] — i.e., epithelial papillomas in mice are generally not produced except after repeated administration.[4] It may be that asbestos fibers facilitate this continued contact. It is also possible that other fibers and materials in common use may act in a similar manner.[5] In order to test these possibilities we have done a number of experiments:

1. Chrysotile fibers were immersed in a very dilute solution of berberine sulfate (1:100,000). After 24 hours the dye had disappeared from the solution, and the fibers were brightly fluorescent.

2. Chrysotile + B.P. were suspended in a variety of liquids to test for adsorption of B. P. on the asbestos. The liquids included (a) water; (b) saline; (c) acetone; and (d) xylol. After more than six months the suspending liquids were replaced and the fibers examined for adsorbed B. P. by fluorescence. In the cases of the B. P. solvents, no fluorescence different from that of the controls was observed. In the aqueous suspensions it was found that the adherence of the B. P. to the fibers was such that alluviation, centrifugation, shaking, or washing on a Gooch crucible could not separate the carcinogen particles from the fibers. FIGURE 9 shows the mixture in white light and by fluorescence. The B. P. could be dissolved off by acetone, but the fluorescence of the fibers was then no more than that of the controls.

Although these results do not indicate that there is any concentration of B. P. on the surface of entrapped asbestos fibers, it appears possible that solid inspired particles such as B. P. may be held firmly for long periods in contact with respiratory epithelium.

FIGURE 9. Benzo[a]pyrene + long fibered Canadian chrysotile in (*left*) white light and (*right*) ultraviolet — (9853 Corning primary filter + 3484 Secondary filter). The fluorescent particles are benzo[a]pyrene. Bright green in the original.

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